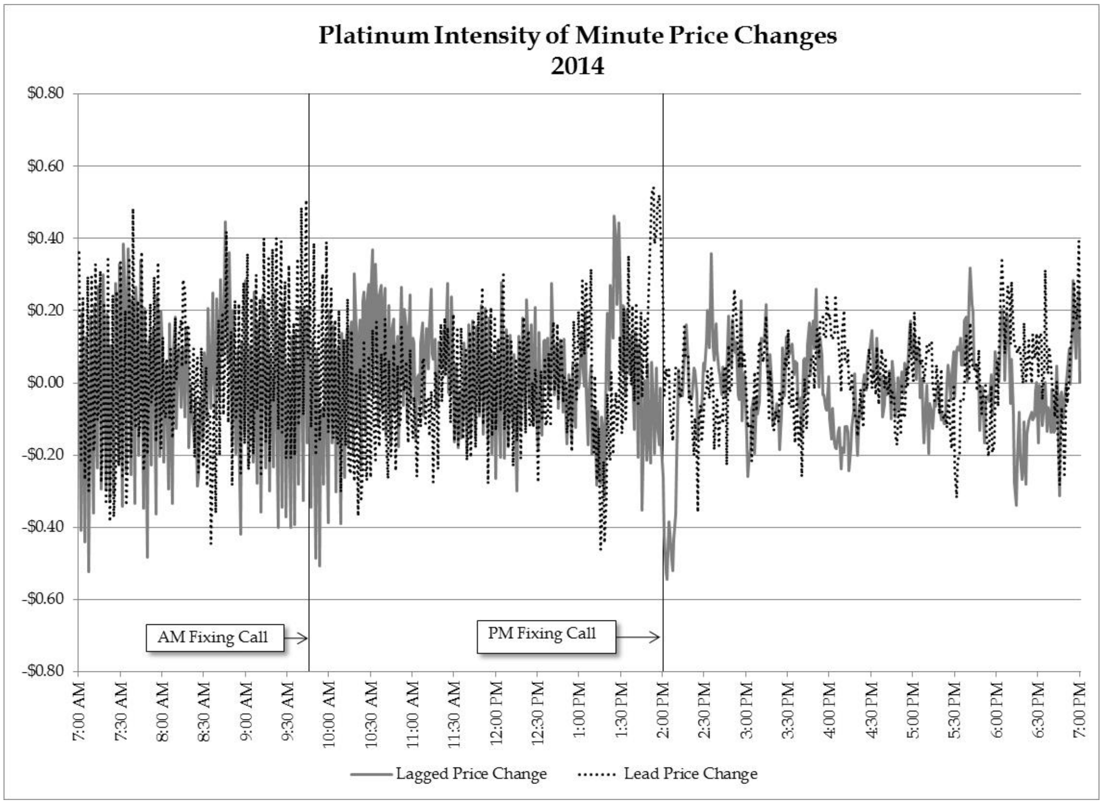
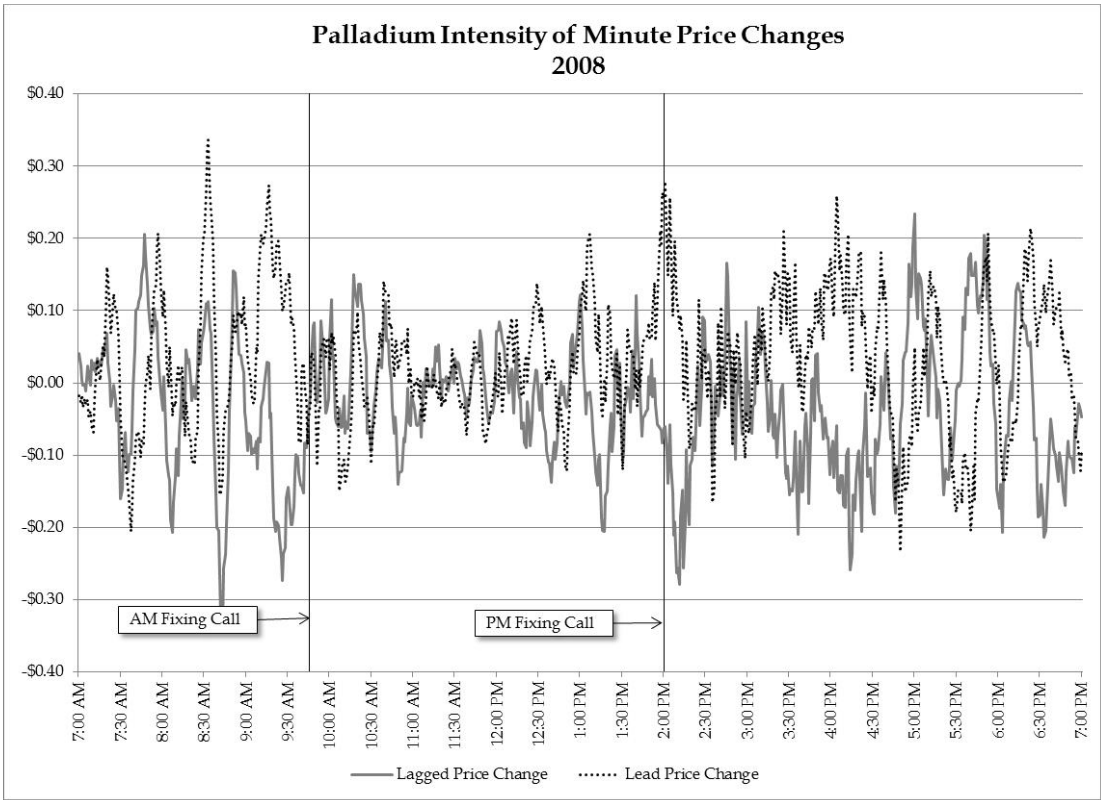
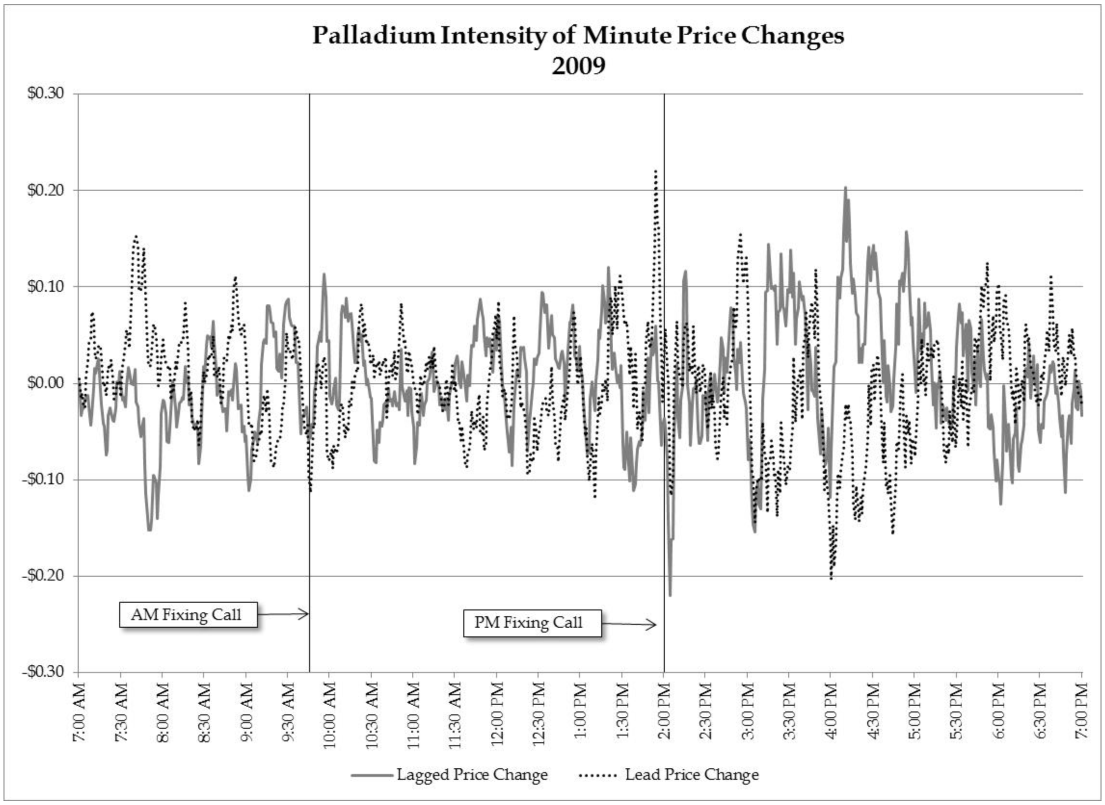
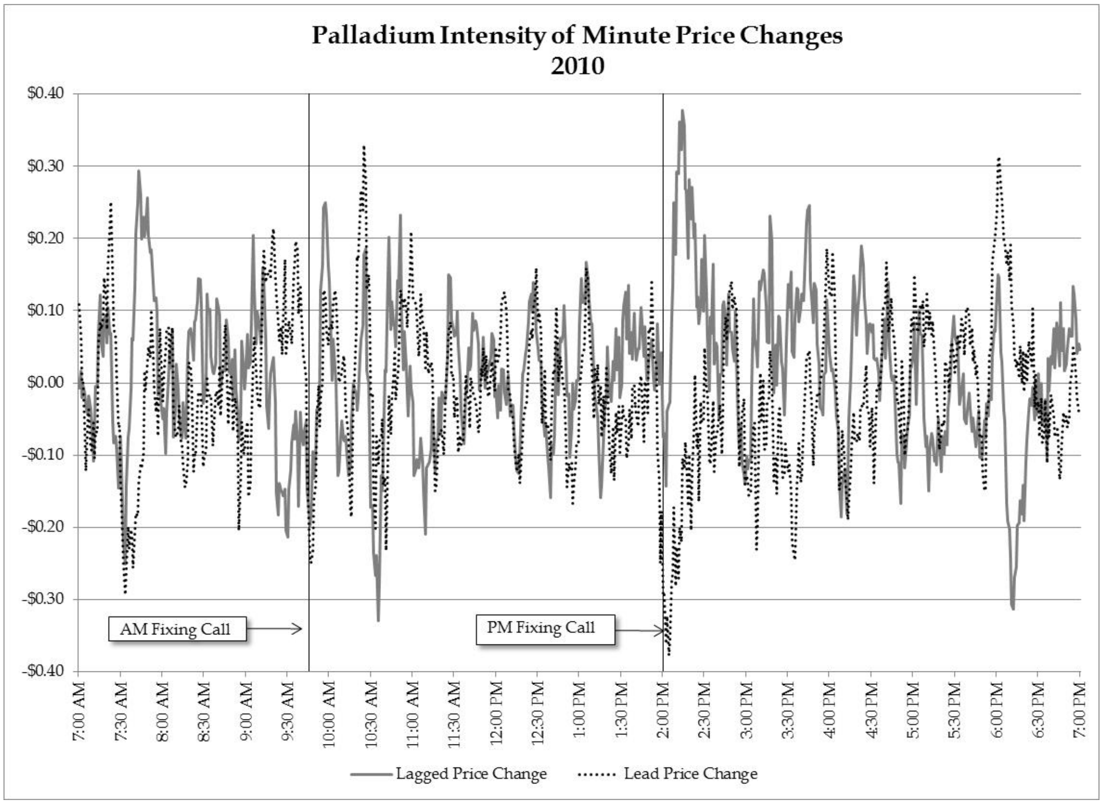

Platinum Intensity of Minute Price Changes
2014
$0.80
$0.60
$0.40
$0.20
$0.00
-$0.20
-$0.40
-$0.60
-$0.80
AM Fixing Call
PM Fixing Call
7:00 AM
7:30 AM
8:00 AM
8:30 AM
9:00 AM
9:30 AM
10:00 AM
10:30 AM
11:00 AM
11:30 AM
12:00 PM
12:30 PM
1:00 PM
1:30 PM
2:00 PM
2:30 PM
3:00 PM
3:30 PM
4:00 PM
4:30 PM
5:00 PM
5:30 PM
6:00 PM
6:30 PM
7:00 PM
Lagged Price Change
Lead Price Change


Palladium Intensity of Minute Price Changes
2008
$0.40
$0.30
$0.20
$0.10
$0.00
-$0.10
-$0.20
-$0.30
-$0.40
AM Fixing Call
PM Fixing Call
7:00 AM
7:30 AM
8:00 AM
8:30 AM
9:00 AM
9:30 AM
10:00 AM
10:30 AM
11:00 AM
11:30 AM
12:00 PM
12:30 PM
1:00 PM
1:30 PM
2:00 PM
2:30 PM
3:00 PM
3:30 PM
4:00 PM
4:30 PM
5:00 PM
5:30 PM
6:00 PM
6:30 PM
7:00 PM
Lagged Price Change
Lead Price Change


Palladium Intensity of Minute Price Changes
2009
$0.30
$0.20
$0.10
$0.00
-$0.10
-$0.20
-$0.30
AM Fixing Call
PM Fixing Call
7:00 AM
7:30 AM
8:00 AM
8:30 AM
9:00 AM
9:30 AM
10:00 AM
10:30 AM
11:00 AM
11:30 AM
12:00 PM
12:30 PM
1:00 PM
1:30 PM
2:00 PM
2:30 PM
3:00 PM
3:30 PM
4:00 PM
4:30 PM
5:00 PM
5:30 PM
6:00 PM
6:30 PM
7:00 PM
Lagged Price Change
Lead Price Change


Palladium Intensity of Minute Price Changes
2010
$0.40
$0.30
$0.20
$0.10
$0.00
-$0.10
-$0.20
-$0.30
-$0.40
AM Fixing Call
PM Fixing Call
7:00 AM
7:30 AM
8:00 AM
8:30 AM
9:00 AM
9:30 AM
10:00 AM
10:30 AM
11:00 AM
11:30 AM
12:00 PM
12:30 PM
1:00 PM
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2:00 PM
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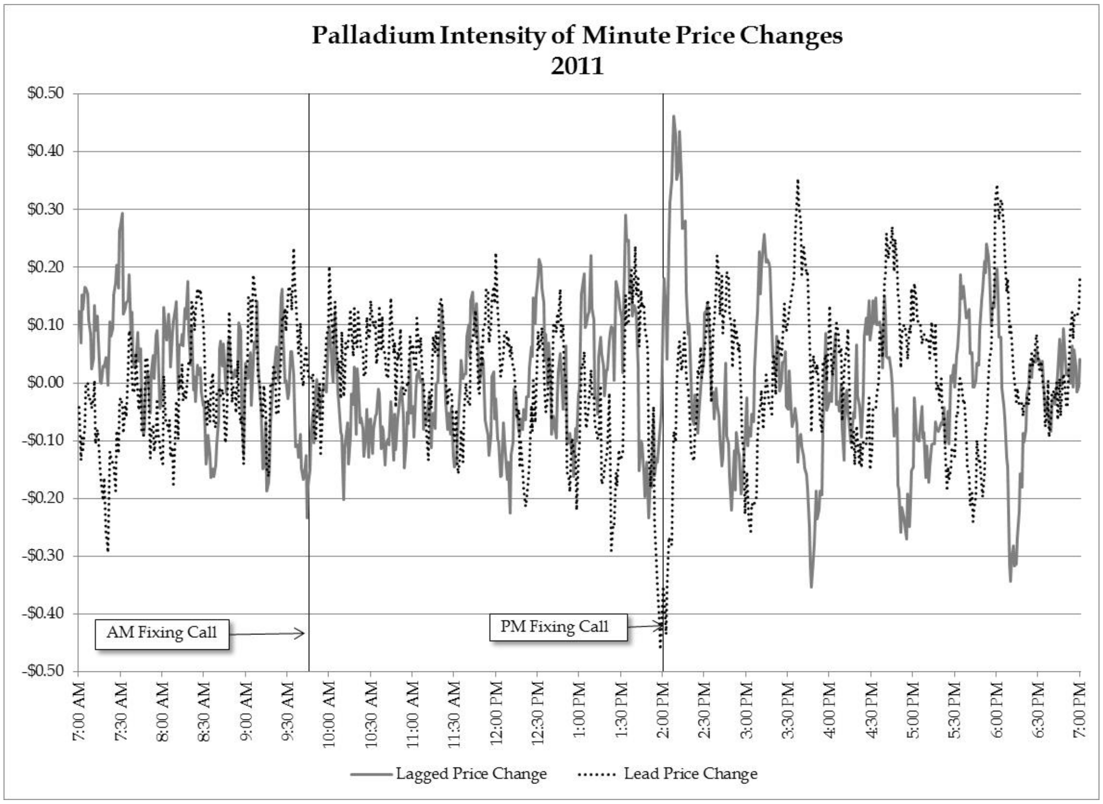
3:00 PM
3:30 PM
4:00 PM
4:30 PM
5:00 PM
5:30 PM
6:00 PM
6:30 PM
7:00 PM
Lagged Price Change
Lead Price Change


Palladium Intensity of Minute Price Changes
2011
$0.50
$0.40
$0.30
$0.20
$0.10
$0.00
-$0.10
-$0.20
-$0.30
-$0.40
-$0.50
AM Fixing Call
PM Fixing Call
7:00 AM
7:30 AM
8:00 AM
8:30 AM
9:00 AM
9:30 AM
10:00 AM
10:30 AM
11:00 AM
11:30 AM
12:00 PM
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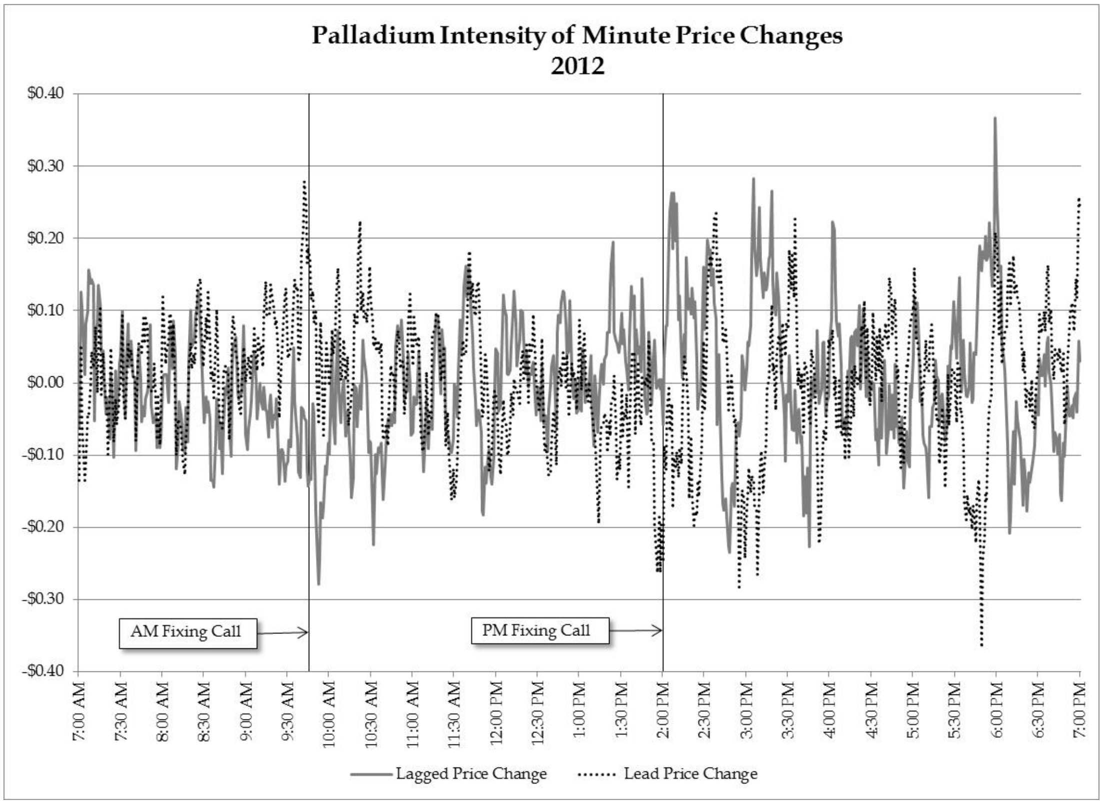
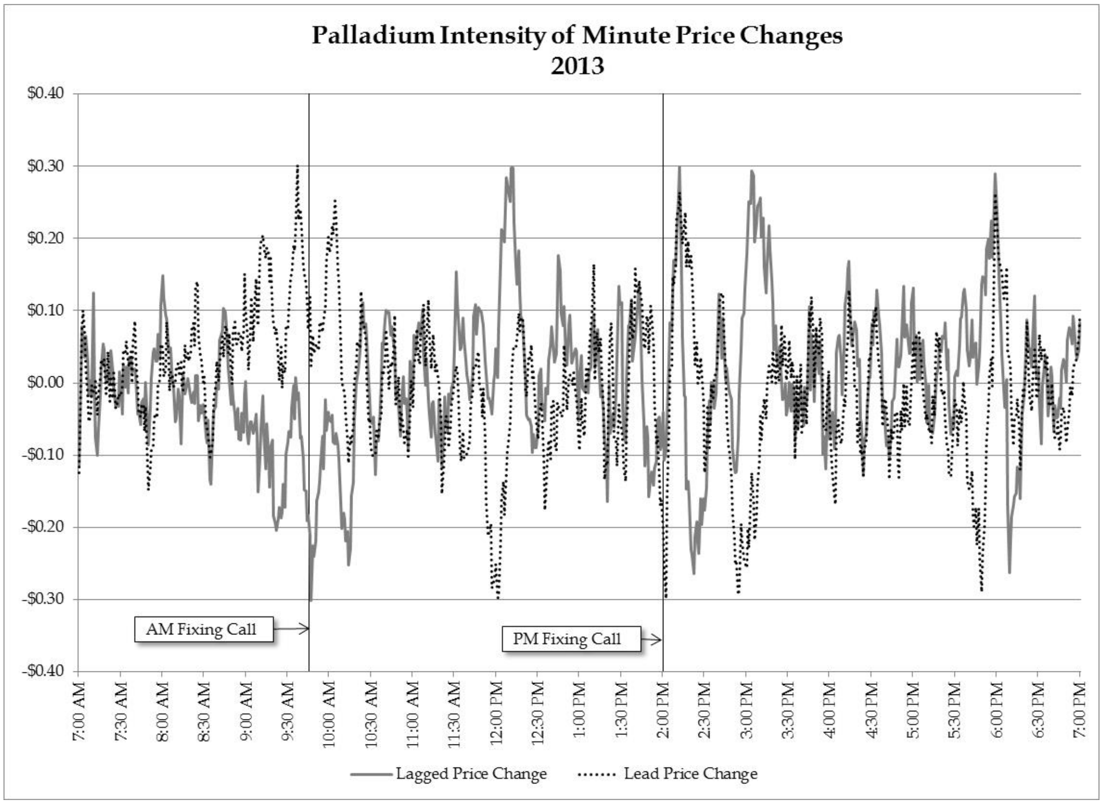
3:00 PM
3:30 PM
4:00 PM
4:30 PM
5:00 PM
5:30 PM
6:00 PM
6:30 PM
7:00 PM
Lagged Price Change
Lead Price Change


Palladium Intensity of Minute Price Changes
2012
$0.40
$0.30
$0.20
$0.10
$0.00
-$0.10
-$0.20
-$0.30
-$0.40
AM Fixing Call
PM Fixing Call
7:00 AM
7:30 AM
8:00 AM
8:30 AM
9:00 AM
9:30 AM
10:00 AM
10:30 AM
11:00 AM
11:30 AM
12:00 PM
12:30 PM
1:00 PM
1:30 PM
2:00 PM
2:30 PM
3:00 PM
3:30 PM
4:00 PM
4:30 PM
5:00 PM
5:30 PM
6:00 PM
6:30 PM
7:00 PM
Lagged Price Change
Lead Price Change


Palladium Intensity of Minute Price Changes
2013
$0.40
$0.30
$0.20
$0.10
$0.00
-$0.10
-$0.20
-$0.30
-$0.40
AM Fixing Call
PM Fixing Call
7:00 AM
7:30 AM
8:00 AM
8:30 AM
9:00 AM
9:30 AM
10:00 AM
10:30 AM
11:00 AM
11:30 AM
12:00 PM
12:30 PM
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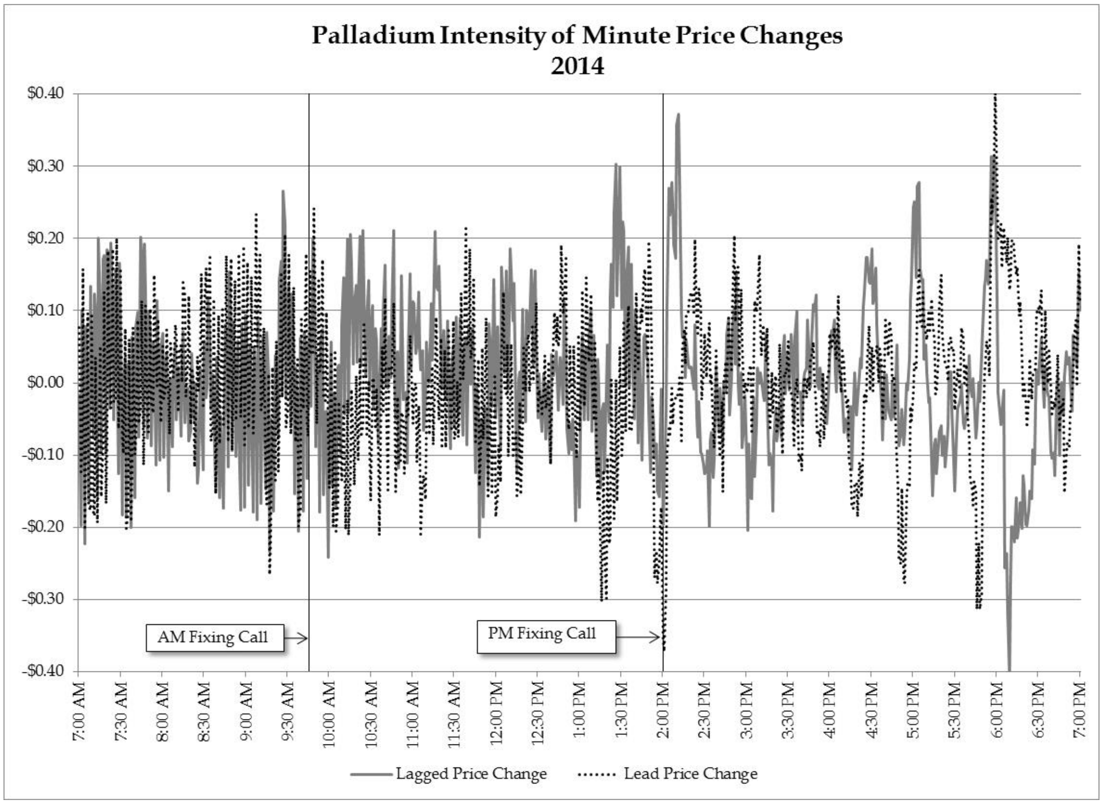
3:00 PM
3:30 PM
4:00 PM
4:30 PM
5:00 PM
5:30 PM
6:00 PM
6:30 PM
7:00 PM
Lagged Price Change
Lead Price Change


Palladium Intensity of Minute Price Changes
2014
$0.40
$0.30
$0.20
$0.10
$0.00
-$0.10
-$0.20
-$0.30
-$0.40
AM Fixing Call
PM Fixing Call
7:00 AM
7:30 AM
8:00 AM
8:30 AM
9:00 AM
9:30 AM
10:00 AM
10:30 AM
11:00 AM
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4:30 PM
5:00 PM
5:30 PM
6:00 PM
6:30 PM
7:00 PM
Lagged Price Change
Lead Price Change

125. It is very frequently around the Fixing that prices show statistically significant negative "returns." While prices move up and down throughout the day, only the Fixing corresponds to both *consistent* downward movement and the largest downward swing of the day. Further, while the magnitude of -4.6 basis points appears small, this is the average return over just a 5 minute period. To put this into context, from January 2000 to December 2013, platinum prices increased from $442 to $1,358 per ounce, approximately a tripling in value. However, this tripling corresponds to only a 2.2 basis point increase *per day* – *i.e.*, less than half the size of the dip witnessed in the *five minutes* following the Fixing.

126. Another way to look at the uniqueness of the anomalies around the AM and PM Fixing is to analyze the average price changes, *i.e.*, the average returns, observed throughout the trade day. When the periods are long, say a year, returns are expressed in percent per year. When the periods are short, say a day, returns are expressed in basis points per day, where a basis point is 1/100 of a percent.

127. By breaking up the trade day into distinct intervals (*e.g.*, 5 minutes and 15 minutes) we can observe whether over these intervals, there is any consistency in returns, *i.e.*, price changes. Consistency is key as markets are noisy. News (good or bad) arrives throughout the day impacting prices. On some days this may be in the morning; on others, this may come later in the day. An "event study" seeks to remove the market noise by averaging returns across days. The central idea is that idiosyncratic events tend to cancel out over sufficiently large sample period.

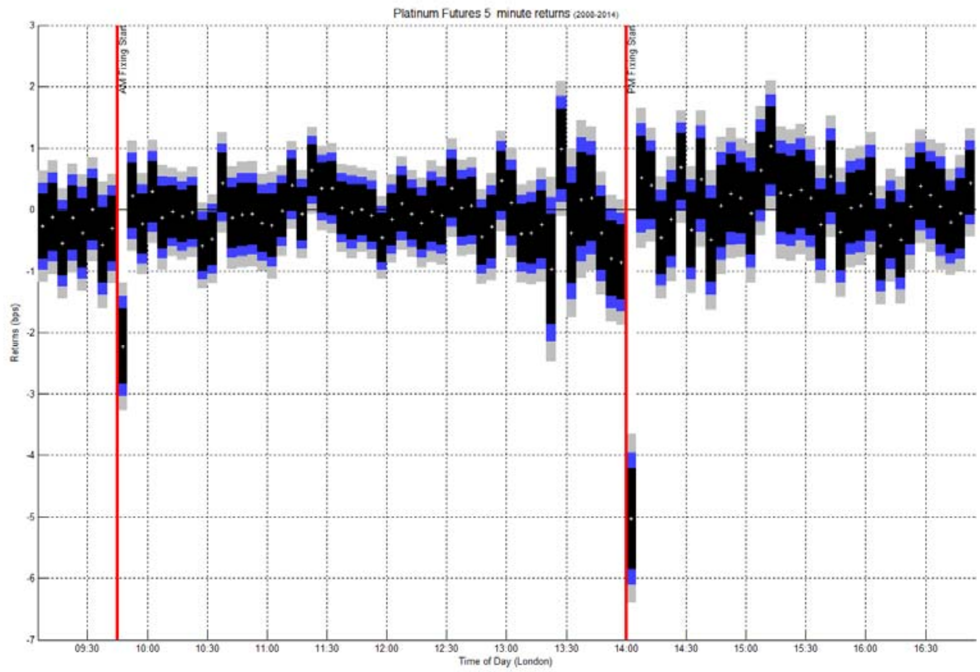
128. The charts below are event studies for the Class Period. The charts show two key characteristics for each interval of the day. *First*, the average return over that period. This is shown by the white "+" marker. This shows the average price change (vertical axis) that was

observed during the specific time interval (horizontal axis) over the seven year sample. However, the average return by itself does not give us sufficient information to say if this average could be attributable to the general market noise or some consistent event. Thus, *second*, to answer this, the charts also show the confidence intervals about the average. These are the black (95%), blue (99%) and grey (99.9%) bars which envelope the average return marker.

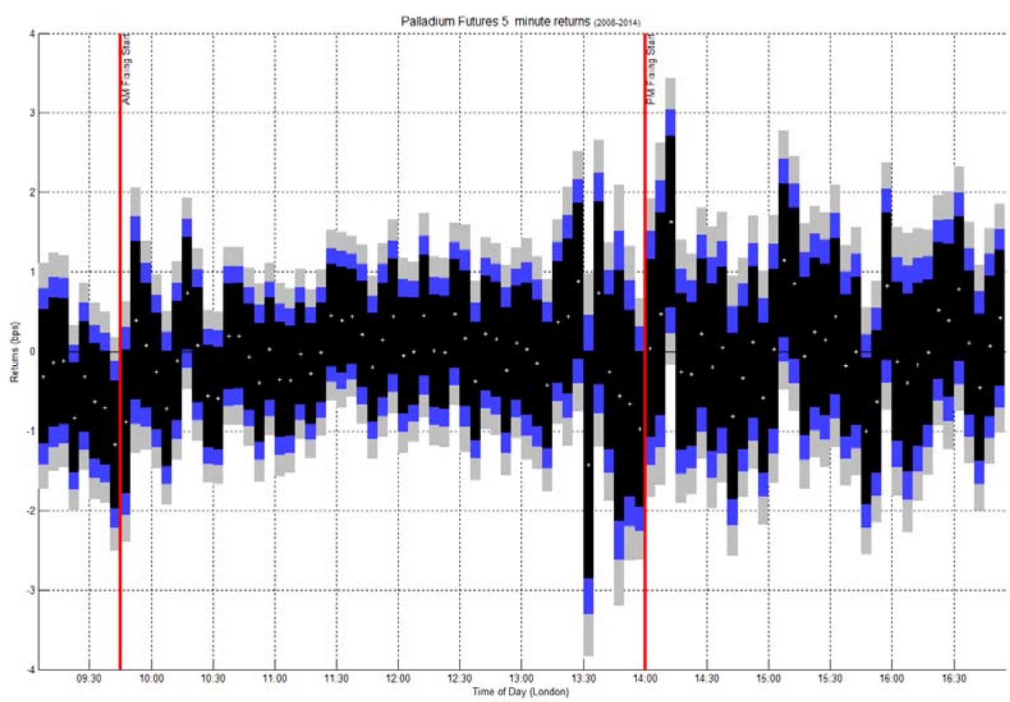
129. The critical feature of the below charts is that they show for which intervals of the day it was "statistically significant" that the returns were below zero. That is we can say with 95%, 99% or 99.9% confidence these returns were negative and not attributable to random market events.

130. The below four graphs show unadjusted returns – the average price changes over 5- and 15-minute intervals through the trade day. These graphs illustrate two key points. *First*, the *only* time of the day for which there are *consistent* negative returns is around the Fixing. While information arrives to the market throughout the day and causes the price to move up or down, when averaged, such movements essentially cancel out. The statistically significant negative returns at the AM and PM Fixing are unique because they show a consistent downward bias. *Second*, the negative returns are largest and most statistically significant right before and after the *start* of the Fixing.

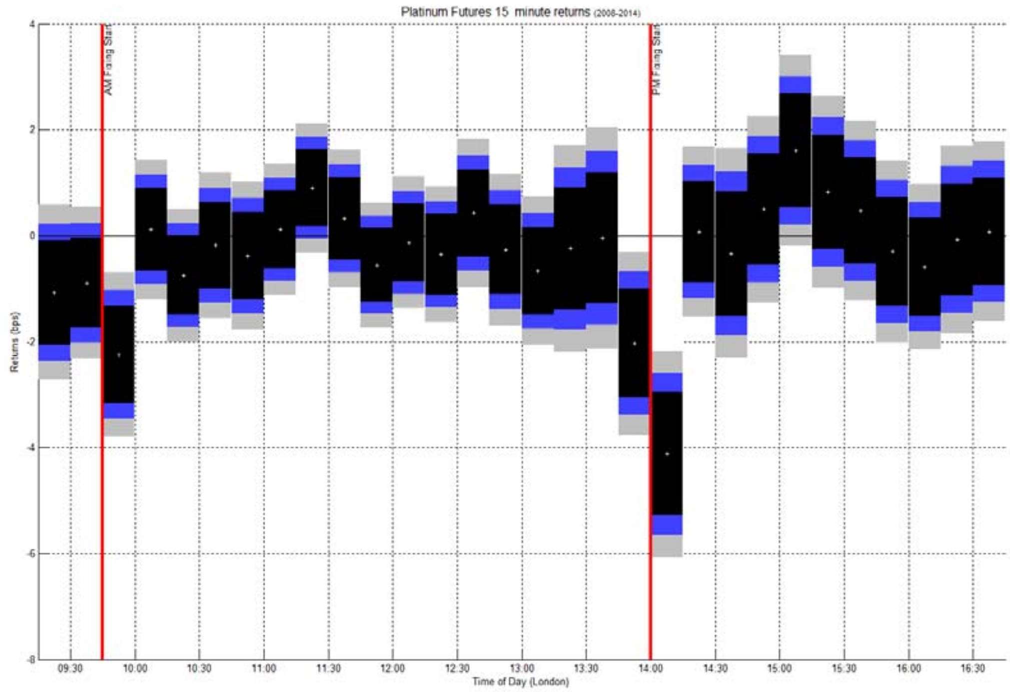
5 Minute Platinum (AM and PM Fix)



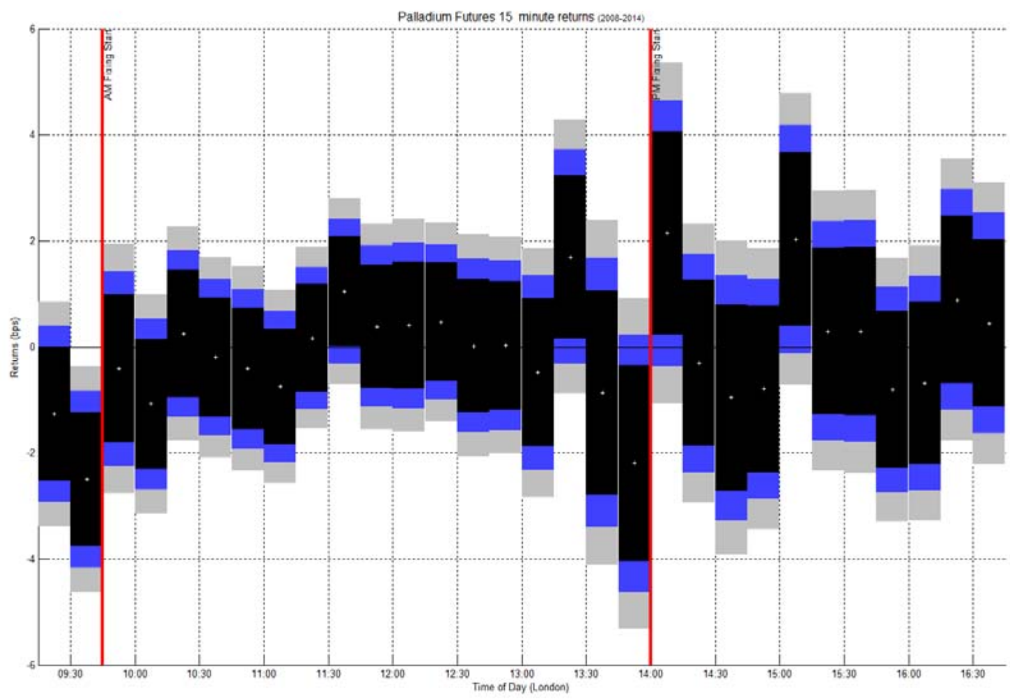
5 Minute Palladium (AM and PM Fix)



15 Minute Platinum (AM and PM Fix)

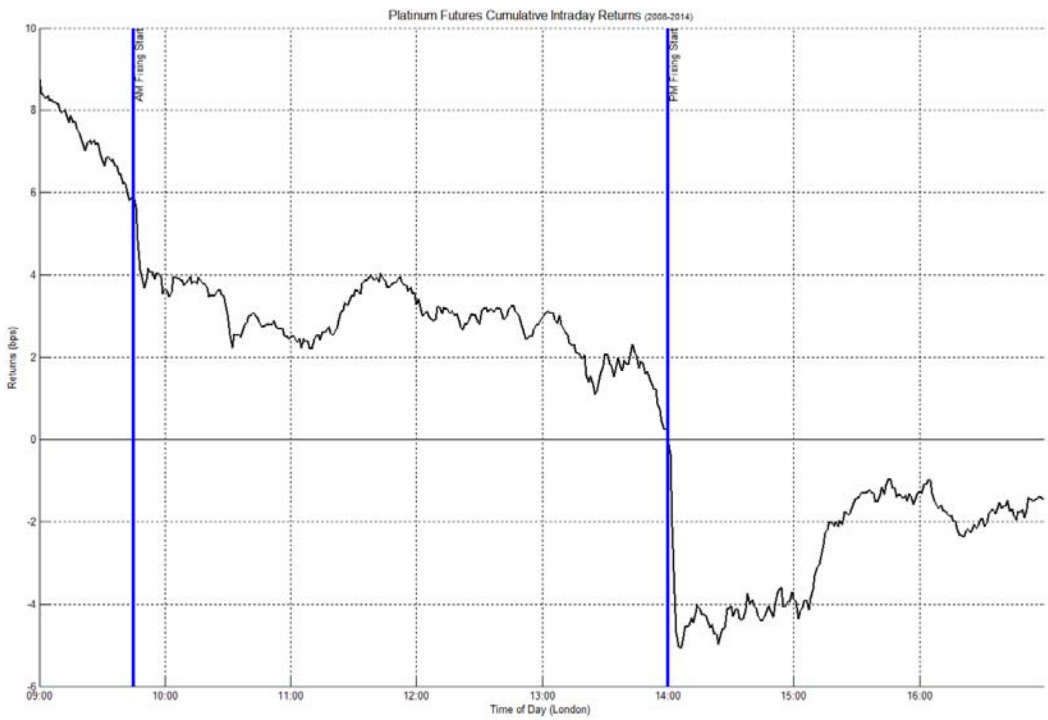


15 Minute Palladium (AM and PM Fix)

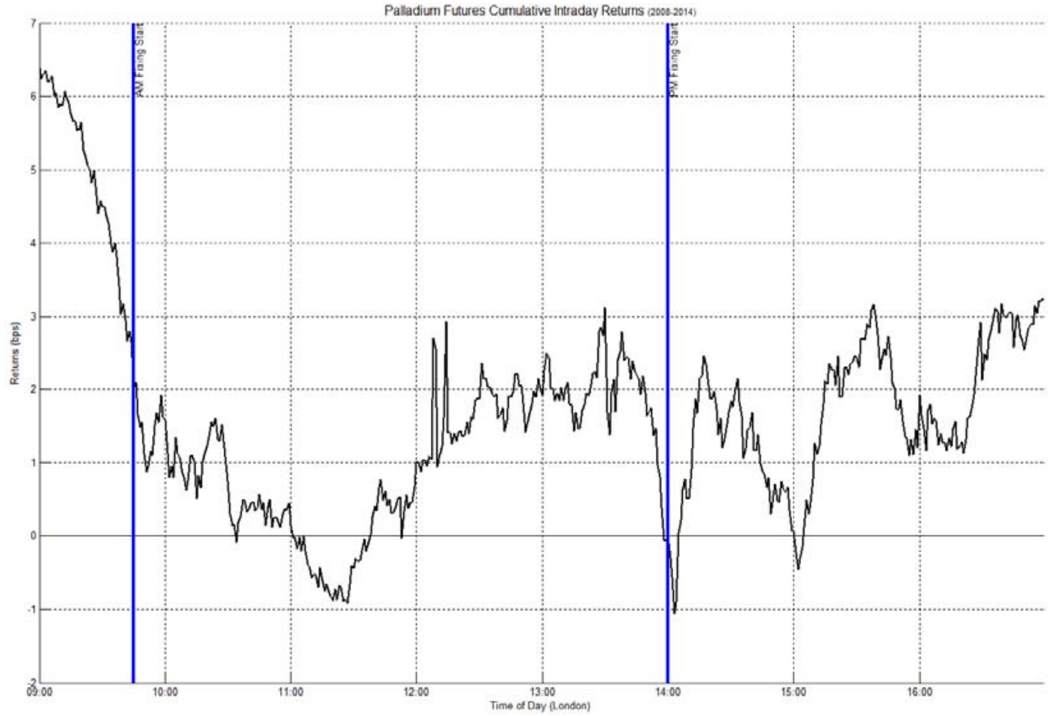


131. The following two unadjusted returns graphs show relative price levels throughout the day, effectively controlling for comparisons across large periods, over which the price levels have significantly changed (*e.g.*, if platinum traded at $440/oz during some years and over $1,000/oz in other years). By focusing on the *relative* price levels, one can see consistent price changes throughout the day. And these price changes clearly correspond to the start of the AM and PM Fixing.

<u>Platinum Futures Cumulative Intraday Returns</u>

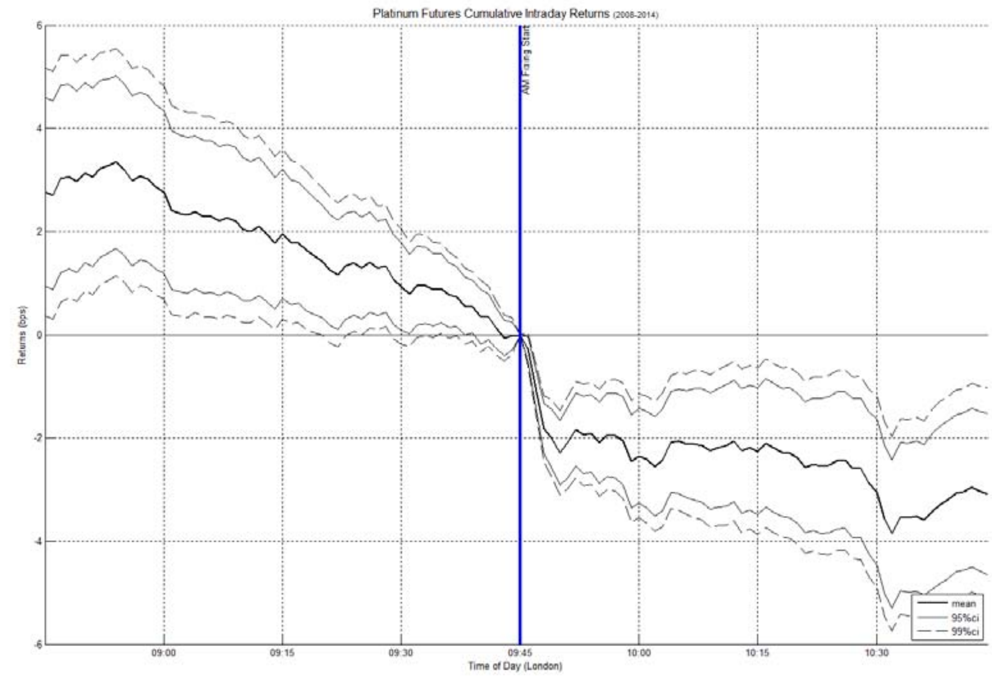


<u>Palladium Futures Cumulative Intraday Returns</u>

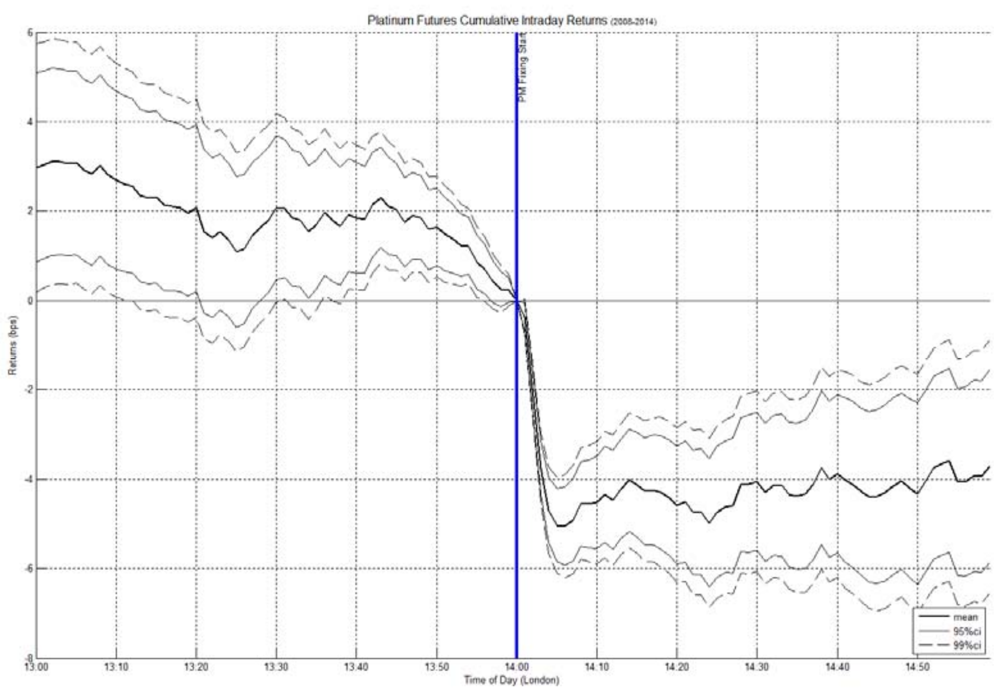


132. The charts below show cumulative unadjusted returns – that is relative price levels throughout the trade day for platinum and palladium. The prices are normalized to zero at 2:00 p.m. London time, the start of the Fixing. The solid line shows the average price, relative to this reference point. The mean price of platinum futures rapidly drop shortly after the start of the London PM Platinum Fixing. The dashed and dotted lines, show the statistical confidence intervals (from 95% to 99.9%) surrounding this average. Combined, these curves show that the average price drop at the Fixing is statistically significant, and cannot be attributable to general market noise. For example, the average drop of 6 basis points ("bps") in the fifteen minutes around the PM Fix (13:45 to 14:05) is almost ten times that of the average ***daily*** return in platinum of 0.7 bps over the same period (2008 to 2014). The average drop for the AM Fix for both metals and the PM Fix for palladium is also statistically anomalous.

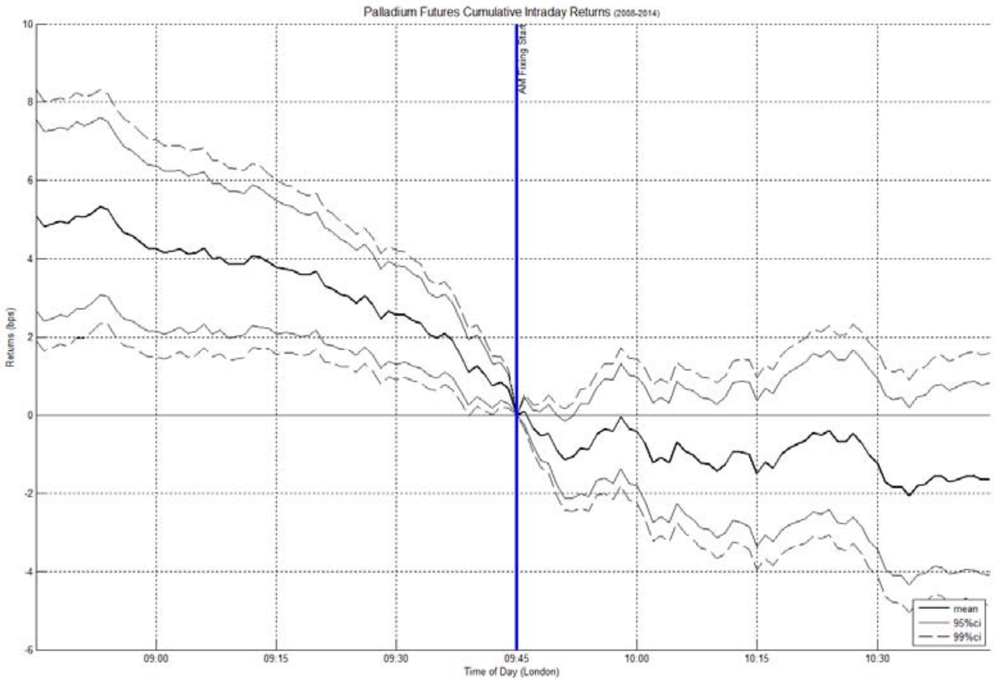
Platinum Futures Cumulative Intraday Returns (AM Fix)



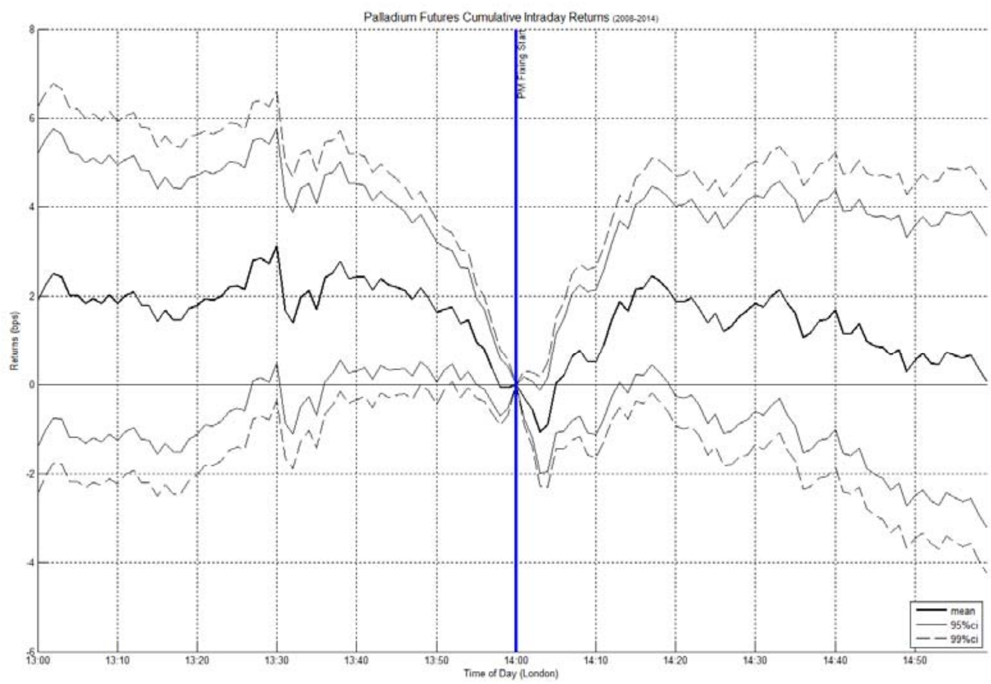
Platinum Futures Cumulative Intraday Returns (PM Fix)



Palladium Futures Cumulative Intraday Returns (AM Fix)

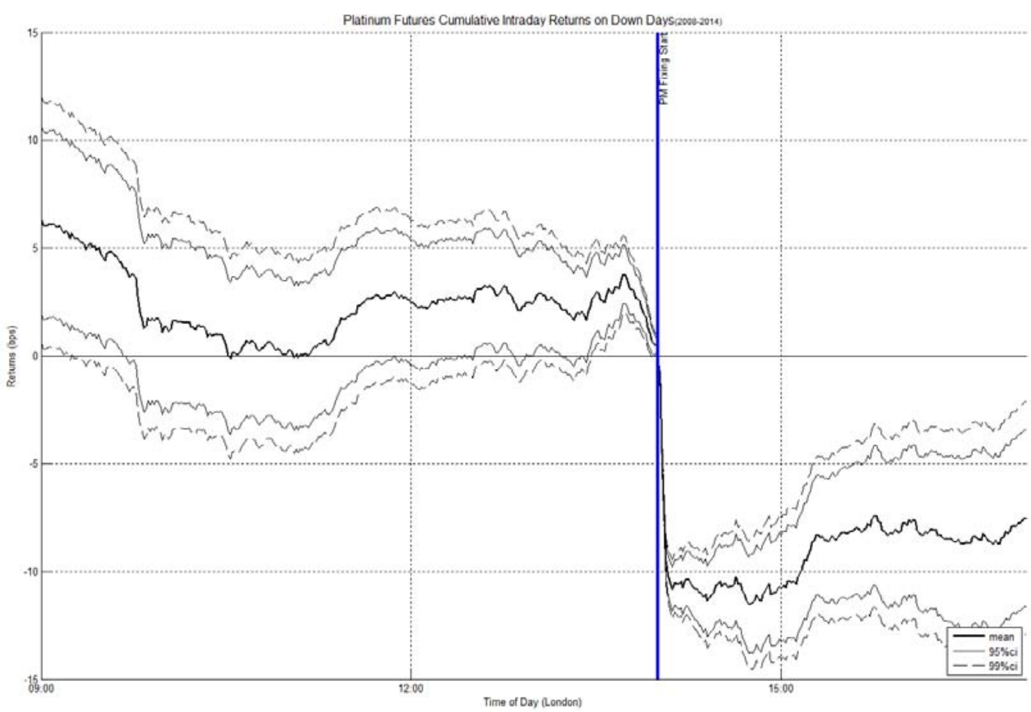


Palladium Futures Cumulative Intraday Returns (PM Fix)

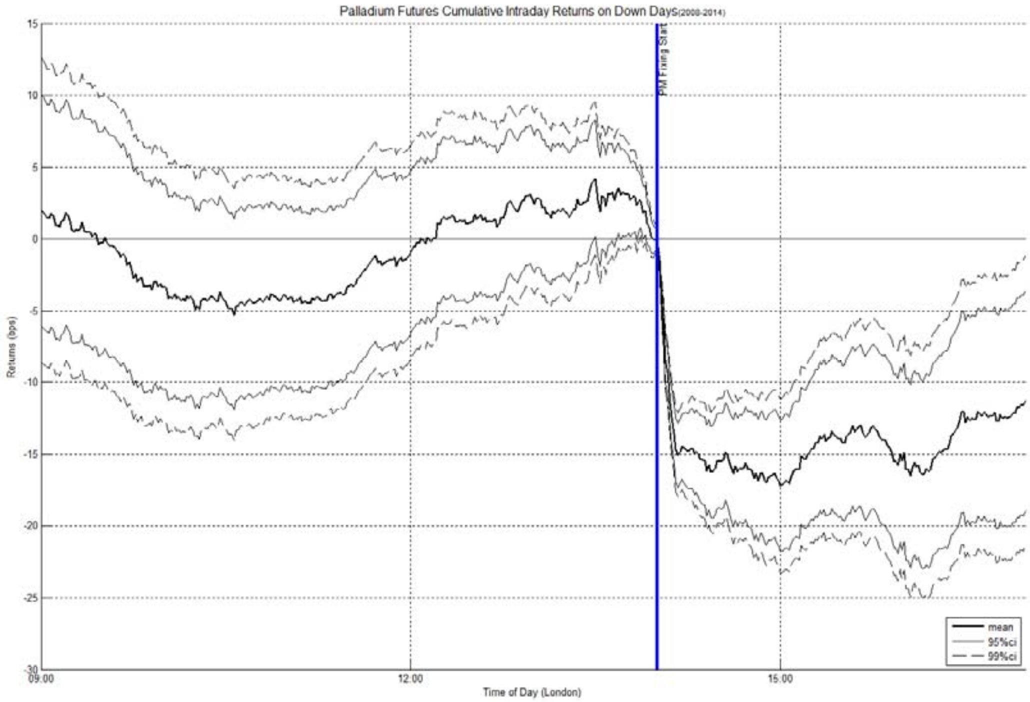


133. While the prior charts show a consistent downward bias in the price of platinum and palladium at the time of the Fixing, the averaging process used to generate the curves combines both positive and negative days. This process masks the true impact of a negative price movement from the Fixing. That is, mixing the positive and negative Fixing attenuates the impact of negative and positive price responses. To observe the true price impact from the negative Fixing, it is worthwhile to focus on only the days with negative Fixing, as illustrated in the charts below. Both platinum and palladium are characterized by significant, negative price movements around the Fixing.

Platinum Futures Cumulative Intraday Returns Down Days (PM Fix)



Palladium Futures Cumulative Intraday Returns Down Days (PM Fix)



134. The foregoing charts illustrate two important results. *First*, the size of the price impact for platinum is around 15 bps, twice the size witnessed in the preceding chart which combined positive and negative days. Similarly large negative price impact was observed for palladium around the Fixing. *Second*, the price impact for both metals can be seen to last for several hours.

E. <u>When Prices Fell at the Fixing They Fell More Than When Prices Rose at the Fixing</u>

135. Not only were prices more likely to fall at the Fixing than at any other time of day, but when prices fell at the Fixing they also fell more in absolute terms than when prices rose at the Fixing. The below analysis compares prices at the start of the Fixing to prices at the end of the Fixing ("Fixing Value"). The median return represents the amount that the Fixing rose or fell over the course of the Fixing. As can be seen, prices on "drop days"—i.e., days when the prices

fell during the Fixing—almost always fell by more in absolute terms than they rose on "increase days."

Platinum and Palladium Spot Price Behavior Following London Fixing Calls
Price at Start of Fixing Call vs. Fixing Value

Platinum A.M. Fixing

Year	Median Return on Drop Days	Median Return on Increase Days	*Difference*
2008	-0.43%	0.18%	*-0.25%*
2009	-0.15%	0.11%	*-0.04%*
2010	-0.07%	0.06%	*-0.01%*
2011	-0.07%	0.04%	*-0.03%*
2012	-0.06%	0.04%	*-0.02%*
2013	-0.07%	0.06%	*-0.01%*
2014	-0.05%	0.03%	*-0.03%*

Platinum P.M. Fixing

Year	Median Return on Drop Days	Median Return on Increase Days	*Difference*
2008	-0.29%	0.17%	*-0.12%*
2009	-0.22%	0.09%	*-0.13%*
2010	-0.12%	0.04%	*-0.08%*
2011	-0.10%	0.05%	*-0.06%*
2012	-0.08%	0.05%	*-0.02%*
2013	-0.10%	0.05%	*-0.05%*
2014	-0.08%	0.04%	*-0.03%*

Palladium A.M. Fixing

Year	Median Return on Drop Days	Median Return on Increase Days	*Difference*
2008	-0.43%	0.49%	*0.05%*
2009	-0.39%	0.22%	*-0.17%*
2010	-0.17%	0.12%	*-0.04%*
2011	-0.12%	0.10%	*-0.03%*
2012	-0.13%	0.09%	*-0.04%*
2013	-0.13%	0.07%	*-0.06%*
2014	-0.08%	0.05%	*-0.03%*

Palladium P.M. Fixing

Year	Median Return on Drop Days	Median Return on Increase Days	*Difference*
2008	-0.47%	0.23%	*-0.24%*
2009	-0.42%	0.20%	*-0.22%*
2010	-0.19%	0.11%	*-0.08%*
2011	-0.12%	0.13%	*0.00%*
2012	-0.13%	0.12%	*-0.01%*
2013	-0.14%	0.10%	*-0.04%*
2014	-0.09%	0.09%	*0.00%*

Note:
Difference = Median Return on Increase Days Minus the Absolute Value of the Median Return on Drop Days

136. The downward bias becomes even more pronounced when you compare prices ten minutes before the start of the Fixing to prices at the end of the Fixing.

Platinum and Palladium Spot Price Behavior Following London Fixing Calls
Price 10 Minutes Before Start of Fixing Call vs. Fixing Value

Platinum A.M. Fixing

Year	Median Return on Drop Days	Median Return on Increase Days	*Difference*
2008	-0.38%	0.15%	*-0.24%*
2009	-0.20%	0.11%	*-0.09%*
2010	-0.12%	0.09%	*-0.03%*
2011	-0.11%	0.06%	*-0.05%*
2012	-0.13%	0.05%	*-0.07%*
2013	-0.12%	0.05%	*-0.07%*
2014	-0.07%	0.05%	*-0.02%*

Platinum P.M. Fixing

Year	Median Return on Drop Days	Median Return on Increase Days	*Difference*
2008	-0.38%	0.20%	*-0.18%*
2009	-0.30%	0.08%	*-0.22%*
2010	-0.15%	0.06%	*-0.09%*
2011	-0.18%	0.09%	*-0.09%*
2012	-0.13%	0.09%	*-0.05%*
2013	-0.17%	0.06%	*-0.11%*
2014	-0.12%	0.04%	*-0.08%*

Palladium A.M. Fixing

Year	Median Return on Drop Days	Median Return on Increase Days	*Difference*
2008	-0.69%	0.22%	*-0.47%*
2009	-0.39%	0.21%	*-0.18%*
2010	-0.22%	0.11%	*-0.12%*
2011	-0.21%	0.14%	*-0.07%*
2012	-0.21%	0.09%	*-0.12%*
2013	-0.19%	0.07%	*-0.12%*
2014	-0.11%	0.10%	*-0.01%*

Palladium P.M. Fixing

Year	Median Return on Drop Days	Median Return on Increase Days	*Difference*
2008	-0.44%	0.23%	*-0.21%*
2009	-0.40%	0.22%	*-0.19%*
2010	-0.34%	0.22%	*-0.12%*
2011	-0.21%	0.21%	*0.00%*
2012	-0.23%	0.17%	*-0.05%*
2013	-0.17%	0.11%	*-0.06%*
2014	-0.13%	0.15%	*0.02%*

Note:
Difference = Median Return on Increase Days Minus the Absolute Value of the Median Return on Drop Days

137. As shown above, the median return (or price changes in percentage terms) in any of these intervals is, with only few exceptions, always larger on days when prices decrease than on days when prices increase around the fixing calls, so that the "difference" is negative. This means that almost always, when prices decrease during and around each of the fixing calls, they decrease by larger magnitudes than when prices increase during and around those calls. These price movements are consistent throughout the Class Period for both the AM and PM Fixings for platinum and palladium. This is significant because, in a world absent manipulation, roughly even magnitudes of decreases and increases would be expected.

F. Analyses of Specific PM Fix Days Confirm Abnormal Spikes Around the Fixing

138. The studies above considered entire years and each found that prices were more likely to move downward, more quickly and larger in size, around the time of the AM and PM Fixing than at any other time of day. The pattern revealed by using a data set as large as an entire year, and run for multiple years, leaves no doubt that prices around the AM and PM Fixing consistently behaved differently than prices at any other point in the day. Specifically, prices around the AM and PM Fixing were much more likely to move downward, much more quickly, and by a much larger amount, than at any other time of day.

139. An analysis of individual days confirms that, in fact, large downward price movements occurred around the time of the Fixing. As seen in the following charts, prices for both platinum and palladium futures and spot platinum and palladium plummeted right around the time of the PM Fixing. These days were chosen merely as examples to illustrate the point of downward manipulation at the time of the PM Fixing.[41]

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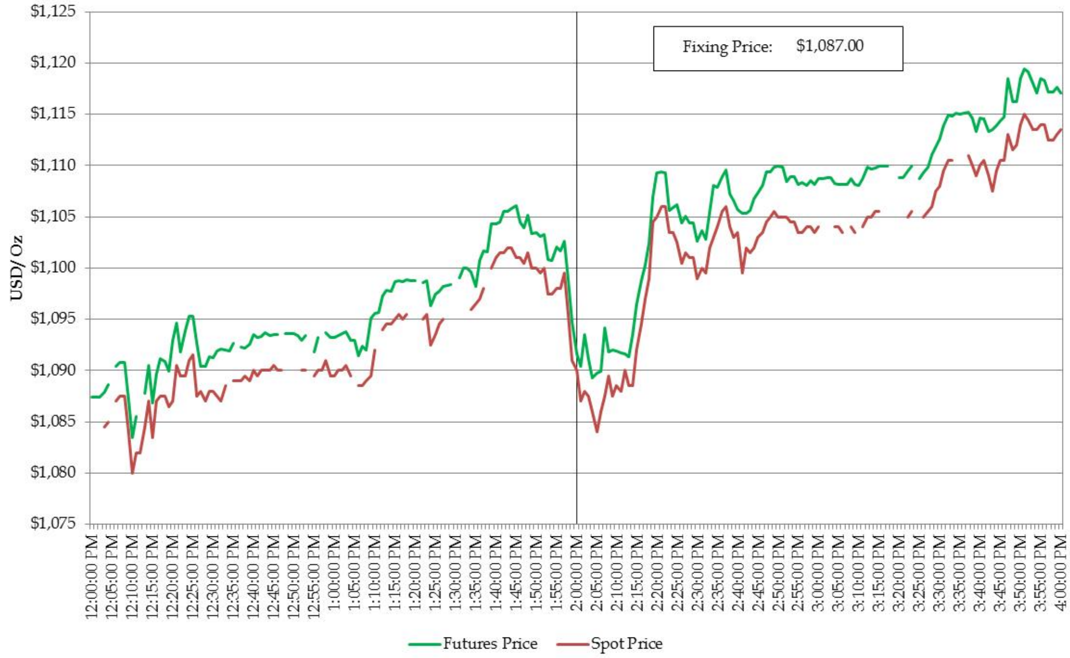
[41] Breaks in lines in the below charts signify missing data.

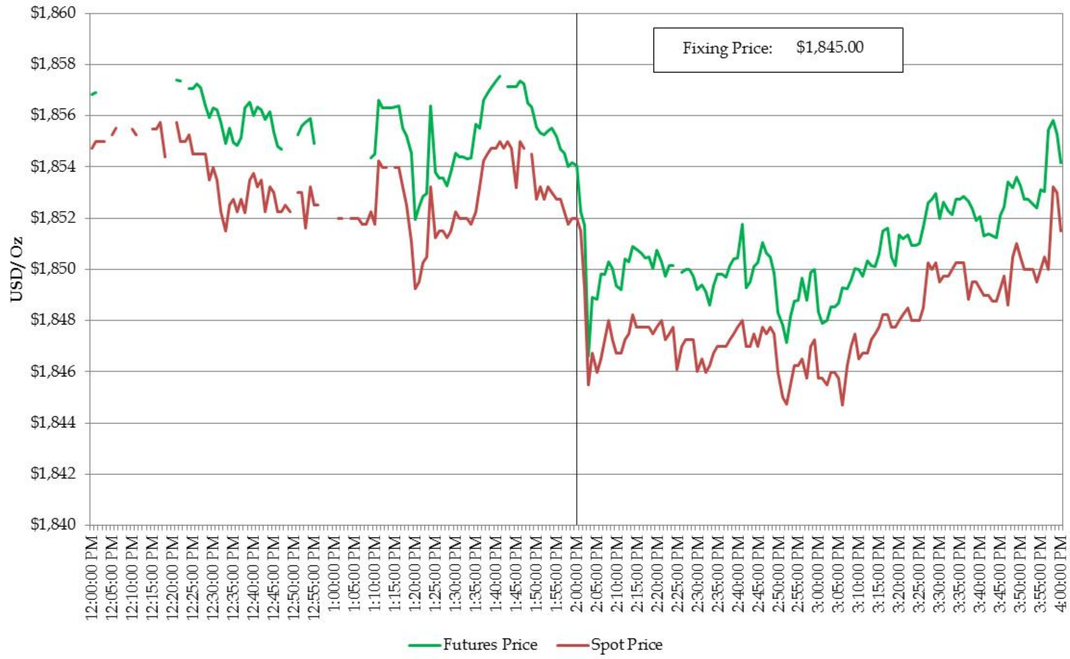
March 19, 2009
Platinum Spot and Futures Prices

(Vertical bar represents the start of the London Fixing call)



August 31, 2011
Platinum Spot and Futures Prices

(Vertical bar represents the start of the London Fixing call)




June 7, 2013
Platinum Spot and Futures Prices
(Vertical bar represents the start of the London Fixing call)
Fixing Price: $1,505.00
USD/ Oz
Futures Price
Spot Price

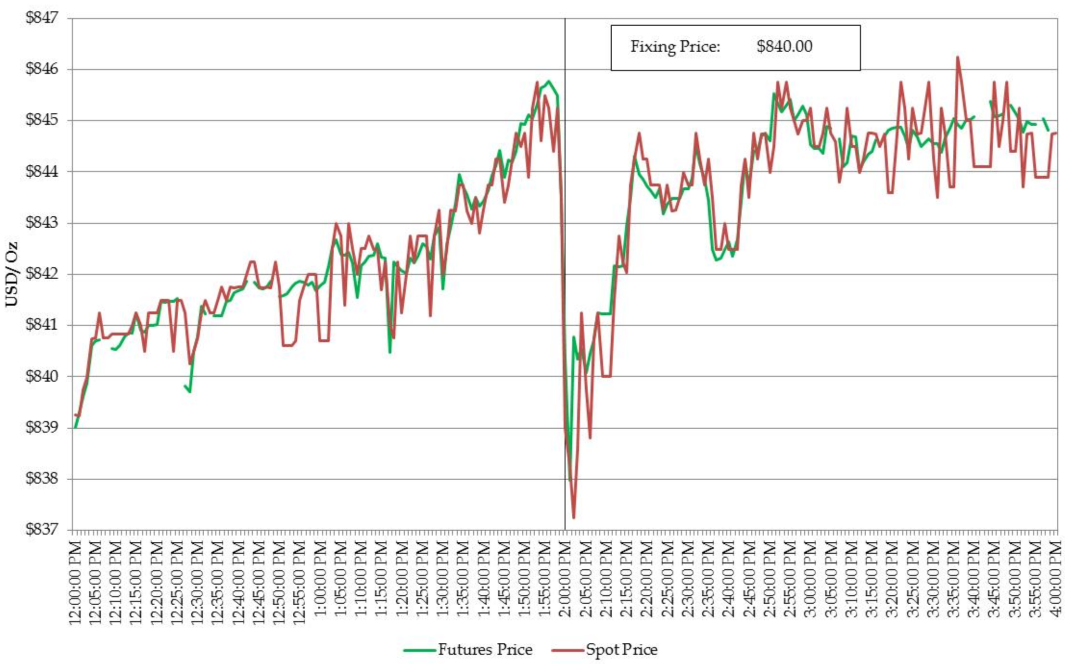

August 26, 2010
Palladium Spot and Futures Prices
(Vertical bar represents the start of the London Fixing call)
Fixing Price: $502.00
USD/ Oz
Futures Price
Spot Price

March 26, 2012
Palladium Spot and Futures Prices

(Vertical bar represents the start of the London Fixing call)

June 6, 2014
Palladium Spot and Futures Prices

(Vertical bar represents the start of the London Fixing call)



140. Individual days are characterized by the same patterns that exist in the aggregate data. Downward movements begin either just before the call initiates or immediately thereafter, and then accelerate. That the downward movement often occurs before the call begins confirms it cannot be the result of the market learning anything from the Fixing. Rather, these movements most plausibly are the result of collusive and manipulative trading techniques employed by the Defendants to create downward pressure in the market and distort prices used during the Fix.

141. In line with the studies discussed above, Plaintiffs have been able to preliminarily identify numerous days throughout the Class Period on which Defendants conspired to and did manipulate the Fixing, and thereby set the price of platinum and palladium at artificially low levels. These days are set out in Appendices A and B for platinum and palladium respectively.[42] The list of days presented in Appendices A and B were identified by several mutually-reinforcing methodologies employed by Plaintiffs. In general, Plaintiffs screened for days where market behavior around the Fixing was significantly different from that in other times during that same day. Plaintiffs employed the following methodologies for both platinum and palladium.

142. *First*, Plaintiffs flagged days for which the PM Fix was among the 5%, 10%, 20% or 30% lowest spot prices within the same day. Comparing prices within a given day has the advantage of controlling for the general trend in prices over time and for events which would have moved all prices on that day up or down relative to other days.

143. *Second*, Plaintiffs calculated the magnitude of price changes by comparing the spot price at 2:00 p.m. (when the PM Fixing began) to prices within 30 minutes of 2:00 p.m. The same statistics for every other reference minute of the day, providing a distribution of the changes against which each minute can be evaluated for possibly being an outlier. When the

[42] Plaintiffs also provide a preliminary list of dates on which one or more of their sales coincided with manipulation of the PM Fixing in Appendices C and D.

price at a particular minute is very different from its neighboring benchmark price, the difference between the two will be large. If the reference price is much lower than the benchmark neighbor price, then that difference is negative, and when it is higher, the difference is positive. A day was flagged when the largest price drop of the day occurred within plus or minus 30 minutes of 2:00 p.m.

144. *Third*, Plaintiffs compared the spot price at 2:00 p.m. to the same day's PM Fix value and computed the amount prices decreased from the start of the Fixing call. The daily price declines for each year were compared to generate a distribution of the price declines. From this distribution, days having the largest 20% of price declines in the given year were flagged as anomalous.

III. THERE IS NO INNOCENT EXPLANATION FOR THE ABNORMALITIES SEEN IN THE PRICING DATA SURROUNDING THE FIXING

A. If the Fixing Was Causing Spikes Because of the Release of New Information, the Spikes Would Occur in Both Directions

145. Plaintiffs considered whether there were large price movements around the time of the Fixing merely because the Fixing represents the release of new information into the market. As an initial matter, this explanation fails to account for the fact that the prices often began to move *before* the Fixing began. The Defendants (and their co-conspirators) were the only market participants that could accurately predict, and thus confidently trade as to profit off of, the Fix prices before the Fixing even began.

146. More basically, if the Fixing was causing spikes merely because they represented new information to the market – *i.e.*, the spikes were the result of legitimate price discovery rather than artificial manipulation – over a multi-year period one would expect the resulting "spikes" to occur relatively equally in both directions. The new information released to the market around the Fixing should, over so many days, be information indicating prices should go

up as often as information indicating prices should go down.

147. But that is not what happened. Over a sufficiently long time horizon, the Fix prices should fall below the median price for that day 50% of the time, and above the median price for that day 50% of the time. *See supra* ¶104. But, as seen above, the Fix price was "low" far more often than it was "high."

148. To isolate this further, Plaintiffs analyzed instances where the Fix prices were *very* high or *very* low. Again, if the Fixing was causing price spikes because they represented new information to the market, then the Fixing would have an equal chance of falling into the very low outliers of prices for the day as it does falling into the very high outliers. Over such a multi-year period as studied here – particularly when in many years the overall trend in platinum and palladium prices was up – there is no reason to believe the Fixing released consistently unexpected "bad" news more often than it released unexpected "good" news.

149. If the spikes around the Fixing were the market's natural reaction to the release of new information, one would see the Fix prices fall below the (low) 5th percentile of prices for that day as often as above the (high) 95th percentile. So, too, one would expect PM Fix prices to fall below the (low) 10th percentile as often as above the (high) 90th percentile.

150. To the contrary, in every year studied, Fix prices were *far* more likely to be in the very lowest range of the day's prices, than in the highest.

151. The following chart compares the number of times the PM Fix prices fell below the 5th percentile to what should have been the relatively equal number of times the PM Fix prices rose above the 95th percentile. The distributions at the extreme percentiles are far from equal. For instance, the PM Fix prices were below the 5th percentile twice as often as one would expect if prices were evenly distributed throughout the day.

152. This confirms that the PM Fixing was not causing spikes *as a general matter,* but instead was causing *downward spikes specifically* and at a frequency far *beyond* what would be expected if prices were just reacting naturally to new information made available during the PM Fixing. In addition, it confirms that the PM Fixing was also causing upward spikes at a frequency far below what would be expected if those prices were just reacting to the new information made available during the PM Fixing. Not only are these results beyond what would be expected if the PM Fixing were releasing "good" and "bad" news equally often – which, again, is a reasonable presumption given the long time horizon studied – but the results are so disproportionately in favor of downward spikes that it is statistically impossible that they occurred by chance.

Ranking Daily Percentile for the PM Platinum Fix Price (Top and Bottom 5%)

Year	Number of Days [A]	% of Days With Percentile Rank Less Than 5% [B]	% of Days With Percentile Rank Greater Than 95% [C]	Difference [D] = [B] - [C]
2008	252	6.7%	4.0%	2.8%
2009	251	12.0%	2.0%	10.0%
2010	251	6.0%	2.4%	3.6%
2011	249	8.0%	1.6%	6.4%
2012	250	6.8%	1.2%	5.6%
2013	251	7.6%	0.8%	6.8%

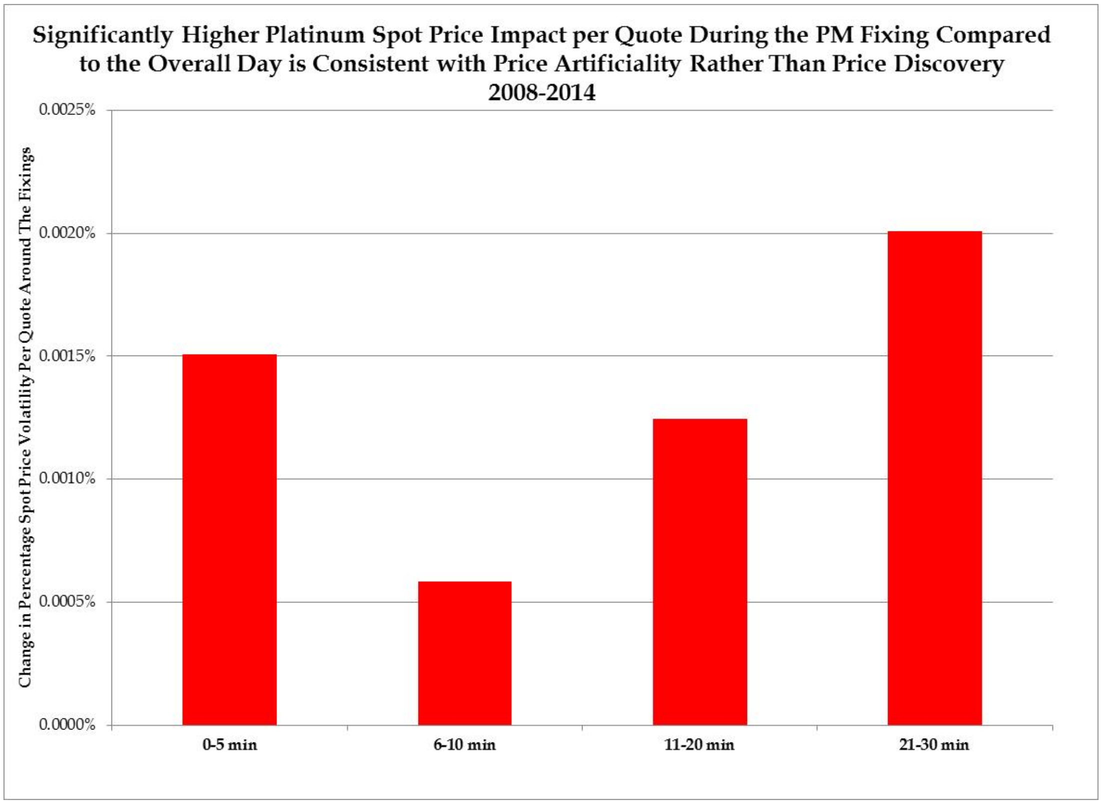
B. Price Movements Around the Fixing Are Not Consistent With Price Discovery

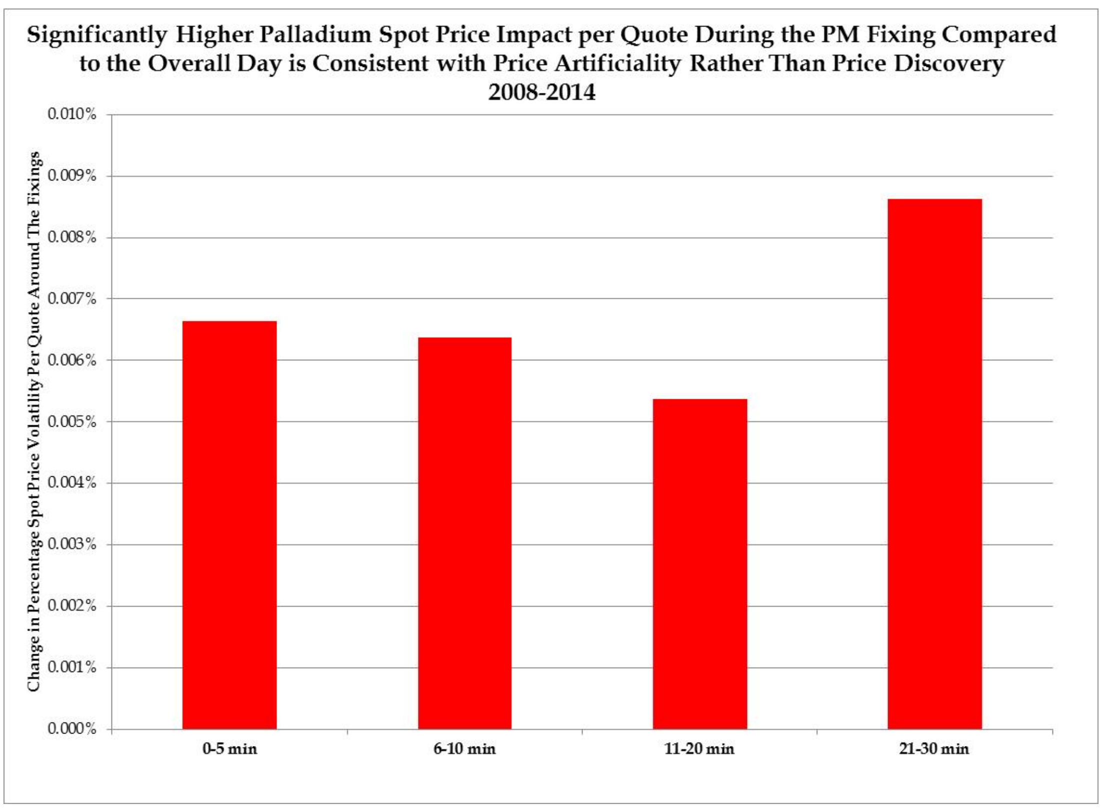
153. In a liquid market, a greater volume of trades generally results in a lower ability of each trade or unit of volume to affect price. Economists commonly refer to how much a price moves in response to a trade or volume traded as "price impact." In the platinum and palladium spot markets, an especially liquid time of day would be during the AM and PM Fixing because large volumes are traded then.

154. As liquidity increases in a non-manipulated market, each trade or unit of volume should have a lesser ability to affect or move prices. That is because when many trades take place, each trade has a smaller share of the overall market activity than when few trades occur, and hence, should be less likely to move prices. Very large price impact per quoted price during very active trading times of the day is evidence of price artificiality rather than normal price discovery.

155. The next graphs show the price impact of a quote during the minutes immediately following the start of the PM Fixing when compared to the average price impact throughout the rest of the day. For the minutes immediately following the start of the PM Fixing (0-5, 6-10, 11-20, and 21-30 minutes after 2:00 p.m.) the price impact of a quote is much higher than throughout the rest of the day, the opposite of what one would expect given that the PM Fixing was an especially liquid time for the platinum and palladium spot markets. The bars in the charts below represent how much larger price impact is during the specified minutes right after the Fixing, with respect to average price impact for the rest of the day.

156. Despite the fact that the period around the Fixing was one of the most liquid times of the day for platinum and palladium trading, the price impact per quote submitted following the start of the Fixing was significantly larger than throughout the rest of the day. This means that despite many trades going through during this time of the day, each of them individually affects average prices by more than at a time of the day when much less trades occur. This result is inconsistent with a natural price discovery process consistent instead with the Fix prices being artificial due to Defendants' manipulative conduct during and around the time of the Fixing, and is inconsistent with normal price discovery.


Significantly Higher Platinum Spot Price Impact per Quote During the PM Fixing Compared to the Overall Day is Consistent with Price Artificiality Rather Than Price Discovery
2008-2014
Change in Percentage Spot Price Volatility Per Quote Around The Fixings
0.0025%
0.0020%
0.0015%
0.0010%
0.0005%
0.0000%
0-5 min
6-10 min
11-20 min
21-30 min


Significantly Higher Palladium Spot Price Impact per Quote During the PM Fixing Compared to the Overall Day is Consistent with Price Artificiality Rather Than Price Discovery
2008-2014
Change in Percentage Spot Price Volatility Per Quote Around The Fixings
0.010%
0.009%
0.008%
0.007%
0.006%
0.005%
0.004%
0.003%
0.002%
0.001%
0.000%
0-5 min
6-10 min
11-20 min
21-30 min

C. Comparison to Other Asset Classes Indicates Manipulation of Platinum and Palladium Prices at the Fixing

157. Plaintiffs ran further analysis to study and compare price movements for similar time intervals at other times of day in both the market for platinum and palladium and in other markets. The results of this analysis (shown in the below chart) show that platinum and palladium prices at the Fixing demonstrate abnormalities that are not seen in platinum and palladium prices at other times of the day and that are not seen in other asset classes.

Comparison of Asset Price Movements
2008-2014

Asset	Time	Time Description	Percentage of Days Price Decreases
Platinum Spot	2:00pm to London PM Fixing	PM Fixing Time Period	73.7%
Platinum Spot	9:45am to London AM Fixing	AM Fixing Time Period	70.1%
Palladium Spot	9:45am to London AM Fixing	AM Fixing Time Period	59.8%
10Y Treasury Bond	2:00pm to 2:05pm London	Start of PM Fixing Call	46.8%
Crude Oil Futures	2:00pm to 2:05pm London	Start of PM Fixing Call	50.4%
S&P 500	2:00pm to 2:05pm London	Start of PM Fixing Call	52.0%
Natural Gas Futures	2:00pm to 2:05pm London	Start of PM Fixing Call	47.9%
Crude Oil Futures	9:45am to 9:50am London	Start of AM Fixing Call	47.8%
Natural Gas Futures	9:45am to 9:50am London	Start of AM Fixing Call	45.3%
Platinum Spot	8:20am to 8:25am EST	NYMEX Market Open	47.6%
Palladium Spot	8:30am to 8:35am EST	NYMEX Market Open	46.6%
Crude Oil Futures	9:00am to 9:05am EST	NYMEX Market Open	50.6%
10Y Treasury Bond	9:30am to 9:35am EST	NYSE Market Open	46.5%
S&P 500	9:30am to 9:35am EST	NYSE Market Open	50.3%
Natural Gas Futures	10:00am to 10:05 EST	NYMEX Market Open	49.0%
Palladium Spot	12:55pm to 1:00pm EST	NYMEX Market Close	45.0%
Platinum Spot	1:00pm to 1:05pm EST	NYMEX Market Close	49.4%
Crude Oil Futures	2:25pm to 2:30pm EST	NYMEX Market Close	47.3%
Natural Gas Futures	2:25pm to 2:30pm EST	NYMEX Market Close	46.9%
10Y Treasury Bond	3:55pm to 4:00pm EST	NYSE Market Close	47.6%
S&P 500	3:55pm to 4:00pm EST	NYSE Market Close	46.8%

158. As can be seen in the above chart, platinum and palladium spot prices around the time of the Fixing exhibit a significantly higher percentage of price decreases as compared to other assets including the S&P 500, the market for U.S. Treasuries, and even platinum and palladium during the open of NYMEX trading. This analysis confirms that the "random walk" theory generally holds and that the random walk theory applies to platinum and palladium at

other times of day.

D. <u>The Asymmetrical Movements Cannot be Explained by a Purported Increase in Market Liquidity</u>

159. Plaintiffs also considered whether the spikes were caused by a purported increase in liquidity around the Fixing. This theory was also implausible, for a number of reasons.

160. Just as there is no reason to expect that the Fixing would *systematically* release (absent collusion) more "bad" news than "good" news, there is no reason to expect that sellers *and only sellers* would, in a freely competitive market, *disproportionately* flock to transact in the platinum and palladium markets around the Fixing window. Indeed, sellers are attracted to "liquid" times of day because, by definition, *that is when the buyers are active in the market*.

161. An increase in liquidity around the Fixing cannot explain the pricing anomalies because it also fails to account for the fact that the consistency of the downward swings began to abate as the banks' benchmarking practices came under increased scrutiny.

162. The hypothesis that the downward spikes were caused by a unique burst of liquidity is also implausible because, while the platinum and palladium markets were liquid around the Fixing, they were not uniquely so.

163. Plaintiffs also rejected a liquidity-increase explanation for the pricing anomalies because the effects of a liquidity-driven spike would be expected to have been short-lived. Once the hypothesized rush of large sellers was gone, prices should have rebounded quickly. But they often did not. Instead, as demonstrated below, the effect of the downward movement lingered far longer than economists would expect to see if a price movement was caused by a singular, inexplicable, repeat pattern of sellers (and only sellers) rushing to the market at a point of time during the day.

164. An increase in liquidity around the Fixing also cannot explain the pricing

anomalies because it is in conflict with the "random walk" theory of efficient markets, which has long recognized that when measured on a given time frame day to day, markets are expected to go up during that time frame just as often as they go down.

165. Plaintiffs ran further analysis to test the hypothesis that sellers disproportionally flock to liquid times of day. By studying price movements for a similar interval at other times of day, in the market for platinum and palladium and even in other markets, one can clearly see the frivolity of the suggestion that only sellers rush to market during expected-to-be-liquid times of day.

166. For instance, the opening and closing of a market are usually among the busiest times of the trading day. Testing across multiple markets – including the S&P 500 and the market for U.S. Treasuries – confirms that the "random walk" theory holds even during periods of increased liquidity across markets and for platinum and palladium itself. *Only* platinum and palladium, and *only* around the Fixings, and specifically the PM Fixing, shows a highly disproportionate number of "down" movements. *See supra* ¶¶157-58 (Comparison of Asset Price Movements 2008-2014).

IV. <u>THE PRICE MOVEMENTS AROUND THE FIXING WERE THE RESULT OF DEFENDANTS' MANIPULATIONS</u>

167. As discussed previously, pricing data indicate highly unusual behaviors around the AM and PM Fixing. The movements revealed by the data defy innocent explanation. Indeed, they are the result of the Defendants' manipulation of platinum and palladium prices for their own profit.

A. <u>The "Tools of the (Manipulation) Trade" Are Well Known to Defendants</u>

168. As noted above, Switzerland's financial regulator FINMA has found "serious misconduct" by Defendant UBS in precious metal trading. Indeed, FINMA's chief executive

officer recently stated that the regulator has "seen clear attempts to manipulate fixes in the precious metals markets." Barclays has entered into a settlement with the U.K. FCA arising out of manipulation in the precious metals context. Defendant UBS has recently agreed to cooperate with the U.S. DOJ and CFTC's precious metals investigation in exchange for immunity from criminal charges. The Defendants' tools of manipulation are coming to light as a result of these investigations, as well as by related investigations into similar conduct in connection with other benchmark litigation.

169. For instance, the CFTC found that Defendants HSBC and UBS, as well as other platinum and palladium industry participants such as Citibank, JPMorgan, and The Royal Bank of Scotland, actively colluded to manipulate the price of Forex benchmarks. This manipulation resulted in the CFTC's imposing fines in excess of $1.4 billion dollars on the five banks. The U.K.'s Financial Conduct Authority imposed a further £1.1 billion in fines on the same five banks in respect to the same manipulation in the U.K.[43] As discussed below, many of the techniques used there were employed here as well.[44] Further, as discussed above, the U.S. Senate noted attempts to manipulate commodities prices by Defendant Goldman Sachs.

170. *First*, the Fixing Defendants met twice daily on a private phone call to discuss

[43] U.K. Financial Conduct Authority, *Final Notice to HSBC Bank plc* (Nov. 11, 2014), at 3, www.fca.org.uk/your-fca/documents/final-notices/2014/hsbc-bank-plc. *See also* U.K. Financial Conduct Authority, *Final Notice to UBS AG* (Nov. 11, 2014); U.K. Financial Conduct Authority, *Final Notice to Citibank, N.A.* (Nov. 11, 2014); U.K. Financial Conduct Authority, *Final Notice to The Royal Bank of Scotland plc* (Nov. 11, 2014). In most cases, these fines were reduced by 30% for early cooperation.

[44] An FCA video explaining HSBC's Forex manipulation is available at http://play.buto.tv/HcMF6. The CFTC has also released multiple examples of trader misconduct in private chat rooms by which Forex-trading banks – including Defendant HSBC – were able to profit from manipulation of currency benchmarks. *See* Commodity Futures Trading Commission, Examples of Misconduct in Private Chat Rooms, www.cftc.gov/ucm/groups/public/@newsroom/documents/file/hsbcmisconduct111114.pdf. These videos and other documentation detail how the concepts of "netting," "taking out the trash," "building," and "giving ammo" were routinely deployed in the Forex arena.

what the price of platinum and palladium should be on that day. These calls involved the direct exchange of intended or future price information among horizontal competitors. This information exchange took place among a small group of competitors with large market shares in the market for platinum and palladium (in both physical form and derivative products). The Defendants' communications with each other – such as the sharing of client orders and imminent orders – were undisclosed, meaning the Fixing Defendants had access to nonpublic, real-time information about changes in the price of platinum and palladium. The Fixing Defendants also had a direct financial interest in the outcome of the Fixing, as they trade platinum and palladium on the spot market and during the Class Period they had large short futures positions on NYMEX. The structure of the Fixing means that the Fixing Defendants are easily able to detect – and if necessary, retaliate against – defectors: all Fixing Defendants will know if any other Fixing Defendant attempts to "break the cartel" because all Fixing Defendants are aware of the net demand represented by other Fixing Defendants during the Fixing. Until recently, the Fixing was, by design, subject to no external monitoring or oversight, let alone by an independent entity. The foregoing features are striking red flags of potential corruption and abuse; it is no accident that their cumulative presence is unheard of and would not be tolerated in other industries.

171. *Second*, the Defendants used chat rooms, instant messages, phone calls, proprietary trading venues and platforms, and e-mails to coordinate among themselves (and likely other bullion banks) to ensure members that attempts to move the market in one way or the other were not undone (unwittingly or not) by the contrary efforts of other members or other large banks. In the context of currency manipulation, the CFTC found that Defendants HSBC and UBS, as well as other precious metals industry participants and LPPM members such as

Citibank, JPMorgan, and The Royal Bank of Scotland, "used private electronic chat rooms to communicate and plan their attempts to manipulate the Forex benchmark prices for certain currency pairs."[45] With respect to precious metals, FINMA found that "just as in foreign exchange trading," evidence showed that the banks shared information on their client orders, and information about expected future orders, with third parties (*i.e.*, other banks).[46]

172. *Third*, with information in hand and a decision made to move in a particular direction, the colluding banks would equip each other with the tools to do so. In the currency context, where one of the five above-mentioned banks had a contrary book of orders, those orders would be "netted off" with third parties in order to reduce the number of adverse orders that were to be processed during the pivotal measurement window – a process referred to as "taking out the filth" or "clearing the decks."[47]

173. When the banks had orders going in the same direction, they would "build" the orders by transferring them between other conspirators – a process referred to as "giving you the

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[45] U.S. Commodity Futures Trading Commission, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of HSBC Bank plc* (Nov. 11, 2014), at 2, www.cftc.gov/ucm/groups/public/@lrenforcementactions /documents/legalpleading/enfhsbcorder111114.pdf. *See also* U.S. Commodity Futures Trading Commission, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of UBS AG* (Nov. 11, 2014), at 2; U.S. Commodity Futures Trading Commission, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of Citibank, N.A.* (Nov. 11, 2014), at 2; U.S. Commodity Futures Trading Commission, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of JPMorgan Chase Bank, N.A.* (Nov. 11, 2014), at 2; U.S. Commodity Futures Trading Commission, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of The Royal Bank of Scotland, plc* (Nov. 11, 2014), at 2.

[46] FINMA Report, *supra* n.7,

[47] *See* U.K. Financial Conduct Authority, *Final Notice to HSBC Bank plc* (Nov. 11, 2014), at 16.

ammo." That way one bank could more easily control the process of ensuring the trades had the maximum effect at just the right time. Again, the CFTC found that the above-mentioned banks – including Defendants HSBC and UBS – repeatedly engaged in such behavior to manipulate Forex benchmarks, including that they "altered [their] trading positions to accommodate the interests of the collective group, and agreed on trading strategies as part of an effort by the group to attempt to manipulate [downward] certain FX benchmark rates."[48]

174. The precious metals (including platinum and palladium) and Forex markets, their benchmarks (including the susceptibility of those benchmarks to manipulation), and the Defendants' respective trading desks were closely related. Indeed, in the case of Defendant UBS's 2013 manipulation of the Forex market, FINMA found that "[t]he PM spot desk responsible for the bank's precious metals trading has been an organizational unit of the bank's Foreign Exchange Spot Desk since the end of 2008."[49] It is no surprise then, that the tools of manipulation now proven to have been used by the banks – including Defendants HSBC and UBS – to manipulate the Forex markets were also used to manipulate the AM and PM Fixing.

175. *Fourth*, even if the Defendants (and their co-conspirators) did not have enough "ammo" to move the market, they would invent it. This has been called "painting the screen" – placing orders to give the illusion of activity, with the intention they would be cancelled later after the pivotal measuring window was closed.

176. *Fifth*, this manipulative behavior was even easier here than in the context of the Forex markets because the Fixing Defendants had another layer of control by way of the purported Fixing "auction" itself. The Defendants coordinated trading activities prior to the Fixing window so as to cause prices to move in the desired direction – making it easier to

[48] *Id.* at 17.

[49] FINMA Report, *supra* n.7, at 12.

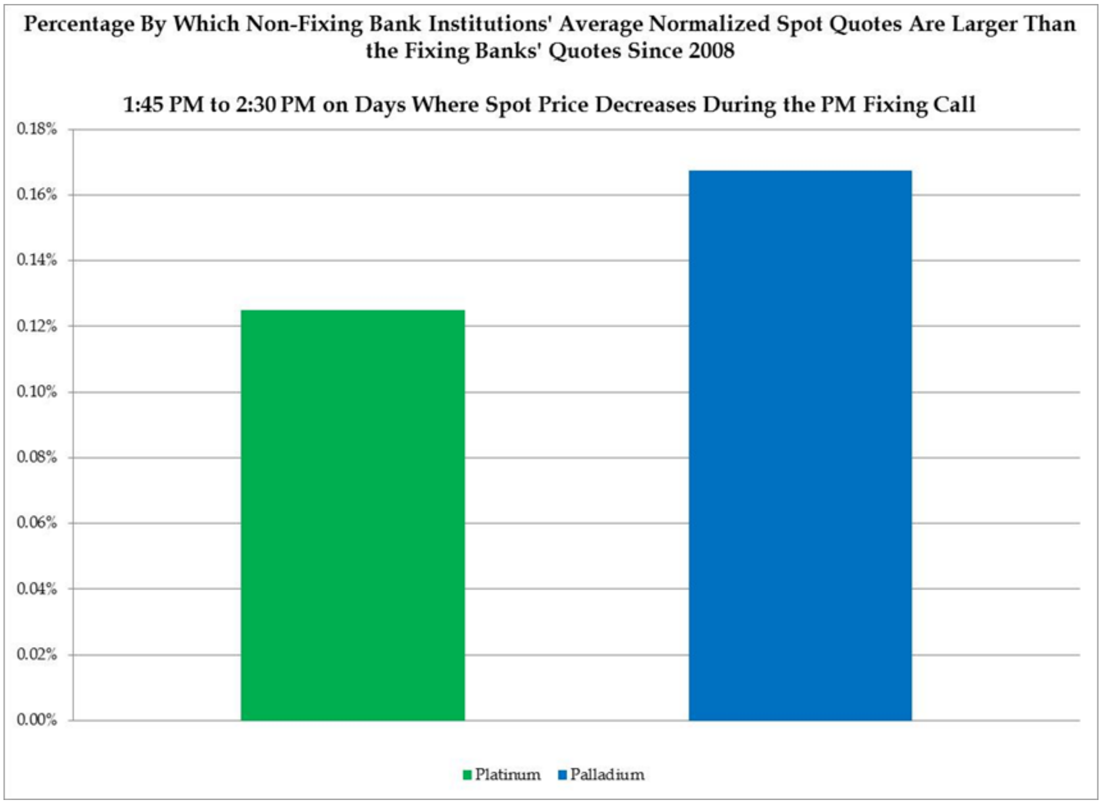
achieve the desired result during the "auction."

177. But, at the end of the day, the Fixing Defendants could also just place "auction" bids and quotes at prices during the AM and PM Fixing regardless of what the true aggregate demands were that had been funneled to them or were on their order books – that is, they acted to set the Fix prices where they wanted (particularly when acting in concert) even if their clients did not take the bait with respect to the manipulative trading practices occurring just prior to and during the Fixing process. Rather than participating in good faith, the Fixing Defendants could simply submit aggregate "auction" "bids" that understated demand, particularly where doing so benefitted each bank's own proprietary positions even as it harmed the bank's clients.

B. <u>The Defendants' Manipulative Activities Impacted the Purported "Auction" Process</u>

178. Evidence of the Defendants and their co-conspirators' collusive behavior intended to downwardly manipulate prices ahead of the Fixing can be seen by comparing Defendants' quotes for platinum and palladium shortly before the Fixing with simultaneous quotes from non-Defendants acting in the same market.

179. As the following graph shows, on those days when the price of platinum and palladium declined shortly before the PM Fixing, non-Defendant participants (who were members of the LPPM) were quoting significantly higher prices for platinum and palladium than the Fixing Defendants.



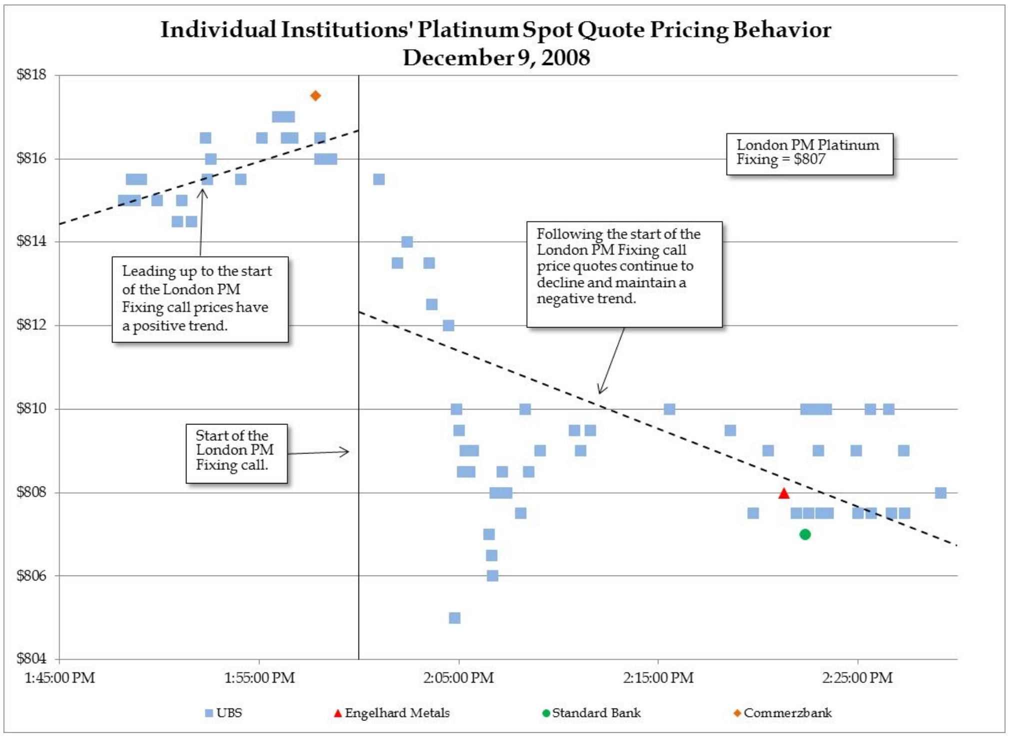
180. These data effectively show that, on the days where the prices of platinum and palladium decreased in the window leading up to and during the PM Fixing, this was at least in part caused by the Fixing Defendants' offering lower quotes for those metals than non-Defendants in the same market during that time.

181. In addition to the Fixing Defendants' average quotes being consistently lower than other market participants, the very limited and incomplete public data for specific quotes on specific days[50] confirms that Defendants (often acting together with banks and other institutions) were driving the movement in prices before and around the Fixing window. Defendants often

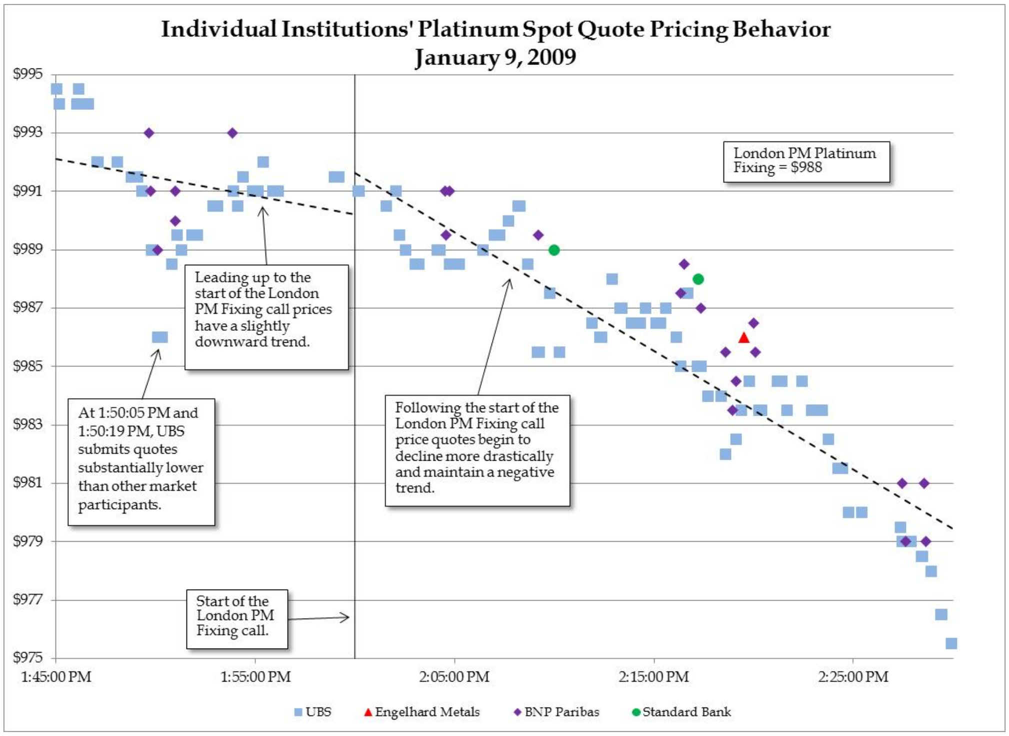
50 Quotes from individual Defendants are only available sparsely, if at all, from public data, and are largely unavailable before discovery. The charts below only include quotes where the quoting institution voluntarily chose to identify itself and UBS's quotes are identified far more often than other institutions. However, Plaintiffs expect discovery to reveal quotes from all Defendants both in advance of and around the Fixings.

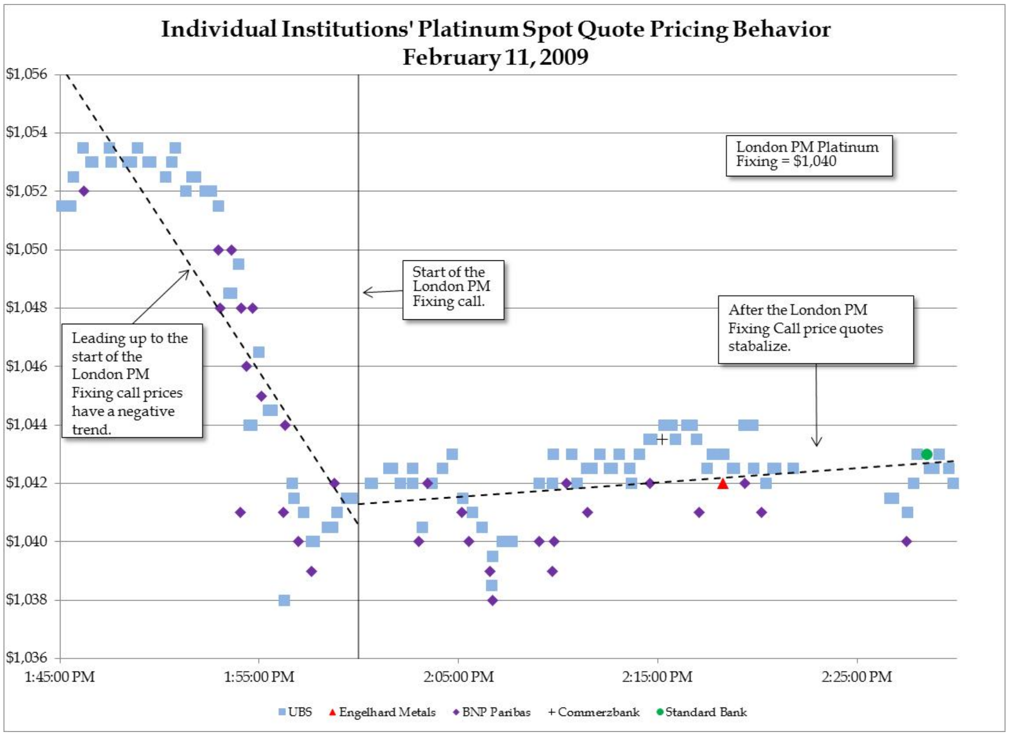
accounted for large portions of the trading activity leading up to and during the Fixing window, opportunistically pushing the fix in the desired direction.

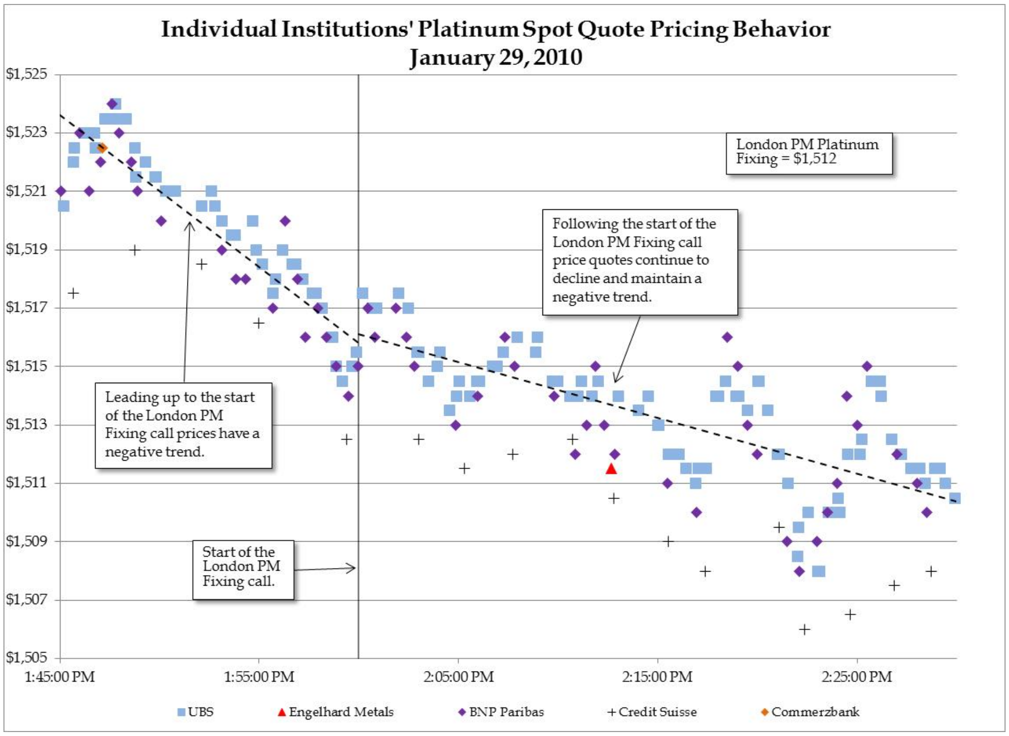
182. For instance, in the below graph it can be seen that large quotes from Defendant UBS (as well as Defendants BASF/Engelhard Metals and Standard Bank) – out of line with the prior pricing trend – triggered a downward spike in the price of platinum from a market level of about $816 before the Fixing window, to a fixed price of $807.

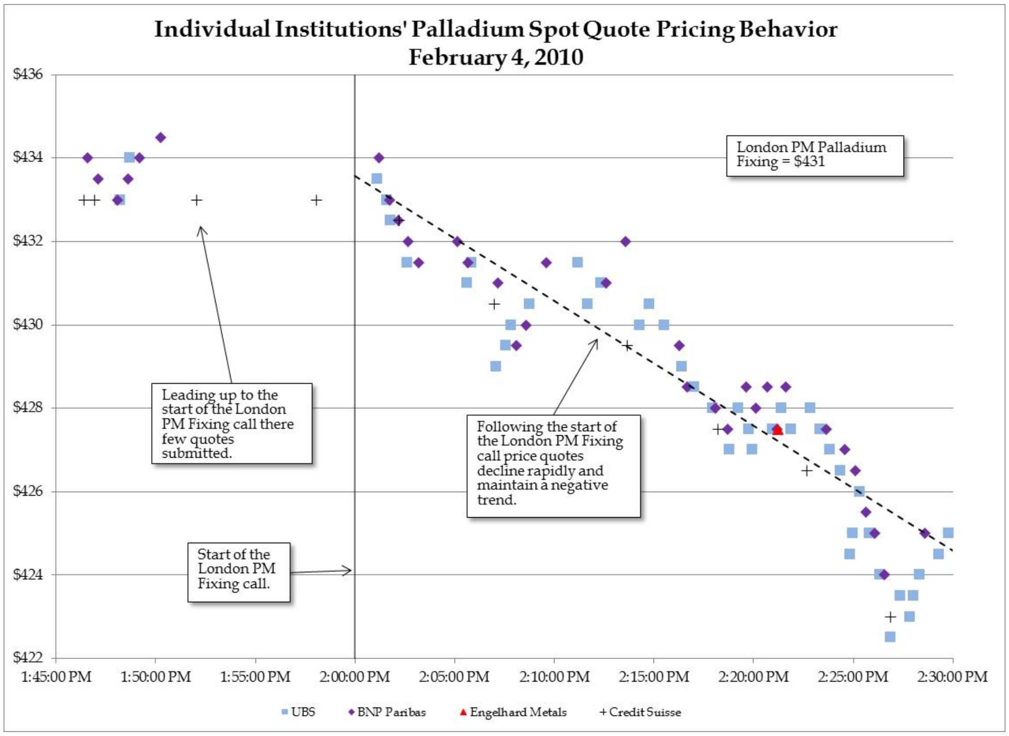


183. These were not isolated episodes. Instead, they represent common and systematic behavior by Defendants. Examples of four additional days from the Class Period are below. As with December 9, 2008, the below graphs are based on very limited and incomplete data, *see supra* n.50, but nonetheless show downward pricing pressure associated with the Fixing window.


Individual Institutions' Platinum Spot Quote Pricing Behavior
January 9, 2009
London PM Platinum Fixing = $988
Leading up to the start of the London PM Fixing call prices have a slightly downward trend.
At 1:50:05 PM and 1:50:19 PM, UBS submits quotes substantially lower than other market participants.
Following the start of the London PM Fixing call price quotes begin to decline more drastically and maintain a negative trend.
Start of the London PM Fixing call.
$995
$993
$991
$989
$987
$985
$983
$981
$979
$977
$975
1:45:00 PM
1:55:00 PM
2:05:00 PM
2:15:00 PM
2:25:00 PM
UBS
Engelhard Metals
BNP Paribas
Standard Bank


Individual Institutions' Platinum Spot Quote Pricing Behavior
February 11, 2009
London PM Platinum Fixing = $1,040
Start of the London PM Fixing call.
After the London PM Fixing Call price quotes stabalize.
Leading up to the start of the London PM Fixing call prices have a negative trend.
$1,056
$1,054
$1,052
$1,050
$1,048
$1,046
$1,044
$1,042
$1,040
$1,038
$1,036
1:45:00 PM
1:55:00 PM
2:05:00 PM
2:15:00 PM
2:25:00 PM
UBS
Engelhard Metals
BNP Paribas
Commerzbank
Standard Bank





184. These graphs indicate that prices not only moved down during the Fixing, but that prices also began to move down – often, contrary to trends occurring during the rest of the day – *before the Fixing process even began*. Both the movements observed prior to the

commencement of the Fixing, and those documented in the early moments of the Fixing prior to its conclusion, constitute evidence of "front-running," *i.e.*, Defendants, with knowledge about what is going to happen at the Fixing, making trades in anticipation of its movement.[51]

C. **The Defendants Were Motivated to Manipulate the Markets for Platinum and Palladium Due to Their Large "Short" Positions and Other Financial Interests**

185. Since at least 2008 until at least 2014, the Defendants and their co-conspirators jointly manipulated the AM and PM Fixing in order to profit from the purchase of platinum and palladium on the spot markets and their short positions on the platinum and palladium futures markets. The Defendants sought to avoid the uncertainties and risks associated with platinum and palladium trading and the associated derivatives markets – *i.e.*, that the market will move against a Defendant's position – by collectively agreeing to manipulate the AM and PM Fixing through repeated conduct to suppress the price of platinum and palladium artificially.

186. The Defendants trade in the physical platinum and palladium markets and in the markets for platinum and palladium derivatives on their own behalf.

187. Defendant BASF Metals trades physical platinum and palladium as well as platinum and palladium derivatives and notes that it is "a full service provider of precious metal products and services, leveraging unparalleled market insight and decades of precious metals sourcing, trading and hedging expertise to create a tangible competitive advantage for BASF and its customers."[52]

188. Defendant Goldman Sachs has a precious metals trading desk and engages in

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51 *See* Caminschi and Heaney, *Fixing a Leaky Fixing*, J. FUTURES MARKETS at 2-3, 8-36.

52 BASF website, www.catalysts.basf.com/p02/USWeb-Internet/en_GB/content/microsites/catalysts/news/news188.

millions of dollars of platinum and palladium physical and derivatives trades each year.[53] Goldman Sachs's physical commodities business originated from its purchase of J. Aron & Co. in 1981. J. Aron & Co. was a leading physical commodities trading house. Since that time Goldman Sachs has expanded its commodities business into one of the largest in the world. Goldman Sachs refers to its commodities division as Goldman Sachs Commodities or GS Commodities.

189. Defendant HSBC has a specialized team that only deals in precious metals and its precious metals trading desks are open for business 24 hours a day.[54] As noted above, HSBC's precious metals and foreign exchange desks are closely integrated. HSBC advertises its unique "supply-side" and "market-demand" intelligence and notes that, "[n]o other firm can match the scope of our involvement in the world's gold, silver, platinum and palladium markets" and that it is "integral to the precious metals market."[55] HSBC further states that, "Our in-depth knowledge and core-involvement in every stage of the precious metals value chain gives us an edge, and our investors an advantage."[56] HSBC engages in millions of dollars of platinum and palladium physical and derivatives trades each year.[57]

190. Defendant Standard Bank has a commodities trading desk and holds millions of

53 *See* Goldman Sachs 2014 10-k at 40, 129, 130, 142-43.

54 HSBC Precious Metals Brochure at 7, 10, www.hsbcnet.com/gbm/attachments/products-services/trading-sales/precious-metals.pdf.

55 *Id.* at 2; HSBC website, www.hsbcnet.com/gbm/products-services/trading-sales/metals.

56 HSBC website, www.hsbcnet.com/gbm/products-services/trading-sales/metals.

57 HSBC 2014 10-k at 65, 150.

dollars of precious metals.[58] Standard Bank operates a platinum and a palladium ETF.[59] Standard Bank also engages in millions of dollars of platinum and palladium physical and derivatives trades each year.[60]

191. Defendant UBS holds itself out as "one of the world's leading suppliers of precious metals."[61] UBS also touts its position as one of the leaders in the precious metals business which is a "cornerstone" of its business.[62] UBS has commodities trading desks in the U.S. through UBS Securities LLC. UBS holds millions of dollars of precious metals and engages in millions of dollars of platinum and palladium trades each year.[63]

192. The below chart shows the massive size of Defendants' commodities derivatives balances during the Class Period.

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[58] Standard Bank website, http://corporateandinvestment.standardbank.co.za/cib/products/global-markets/Commodities; Standard Bank 2014 Results Analysis at 88.

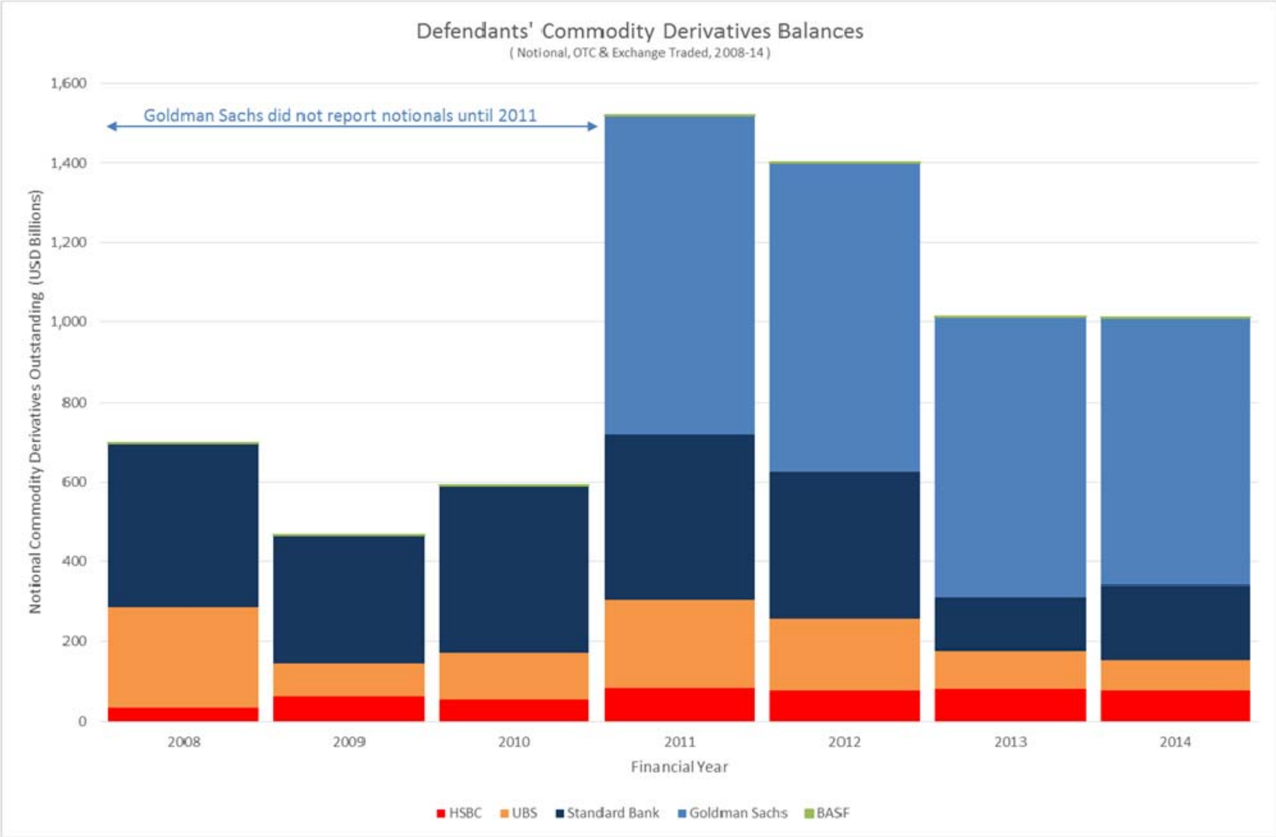
[59] Standard Bank website, http://corporateandinvestment.standardbank.com/standimg/CIB/Common/Products%20and%20services/Global%20Markets/CIBelectronic210x210%202.pdf.

[60] Standard Bank 2014 Results Analysis at 44.

[61] UBS website, http://www.ubs.com/ch/en/swissbank/wealth_management/exclusive_services/gold.html.

[62] UBS Form 20-F (Dec. 31, 2014), at 56.

[63] *See id.* at 238, 406, 442, 444, 473, 749, 759.

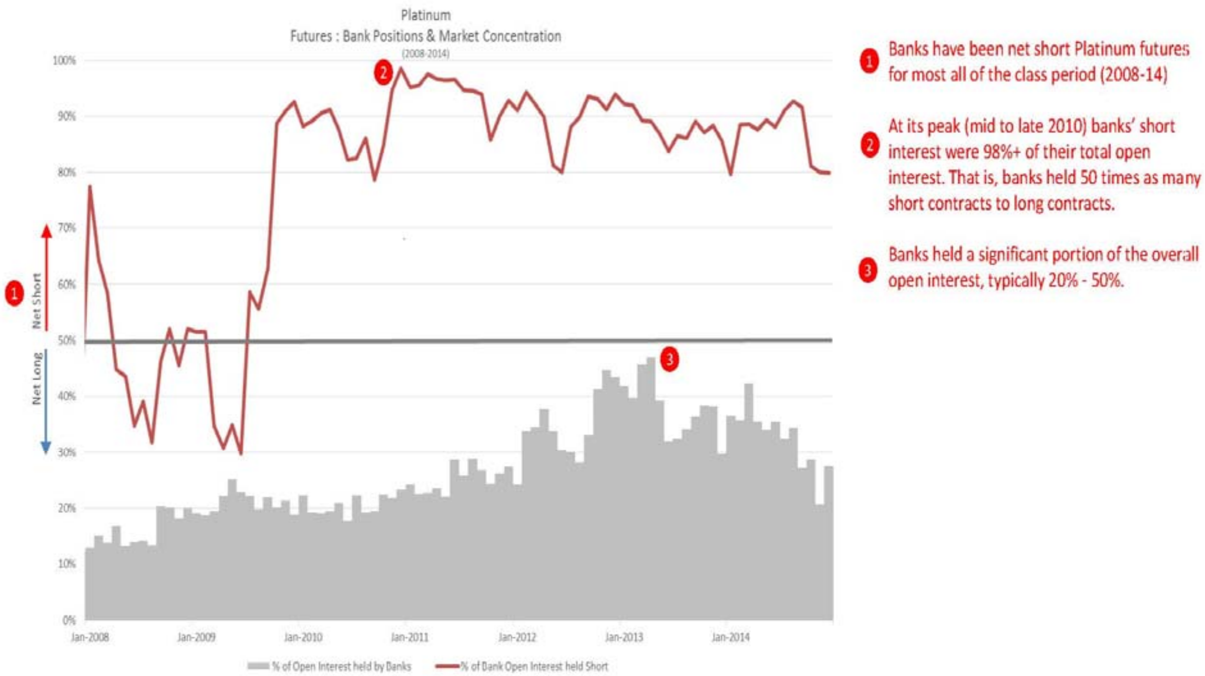


193. It is impossible prior to discovery to quantify each individual Defendant's short positions in the futures and over-the-counter markets because neither they nor the CFTC publish this data, but on information and belief, Defendants Goldman Sachs, HSBC, Standard Bank, and UBS had a significant net short platinum and palladium position during all or most of the Class Period. Utilizing data from CFTC reports, the following chart shows (the thick red line) that when the banks' calls, puts, and net futures are combined, the banks overall were net "short" through the majority of the Class Period based on their positions in exchange-traded platinum and palladium futures and options – *i.e.*, they had an interest in suppressing the price of platinum and palladium.[64] The major platinum and palladium trading banks, including Defendants,

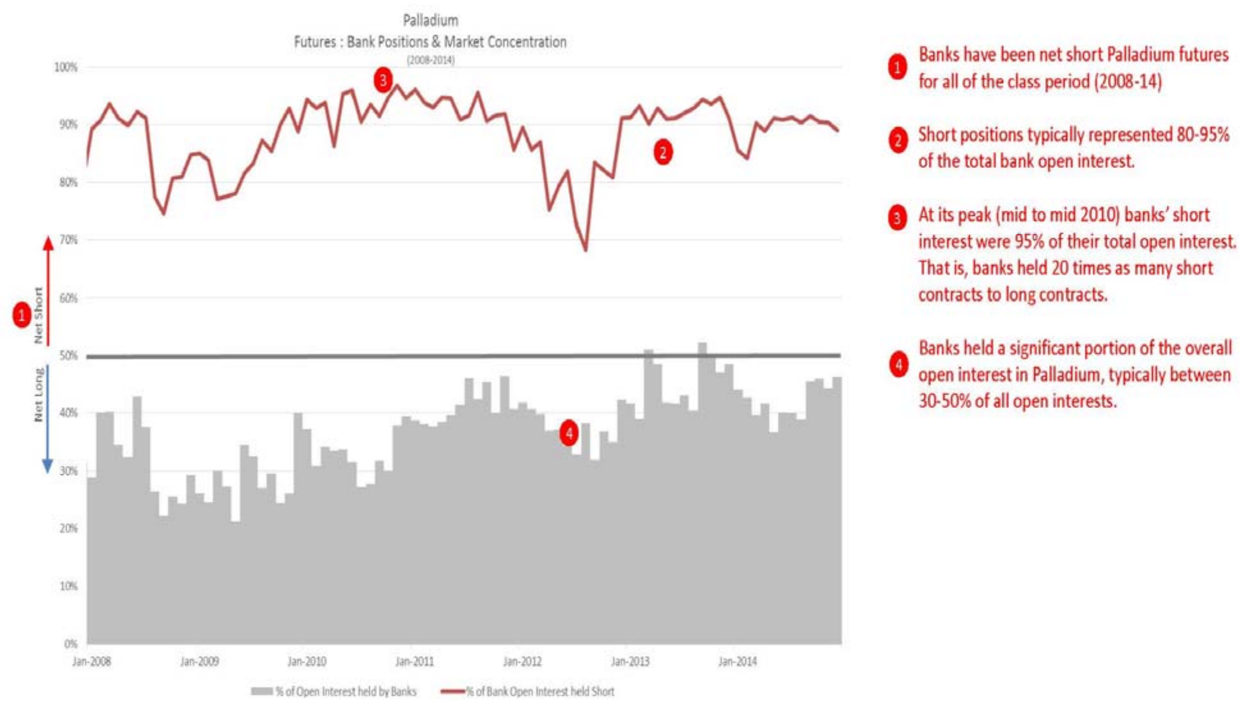
[64] The data in this chart is drawn from the CFTC's Bank Participation Reports. BASF is not included in this data because it is not a bank. Although this data is not broken out by bank, it is a fair inference that the Defendants here – who readily admit that they are among the leading traders dealing in platinum and palladium worldwide – contribute significantly to the data.

comprise the majority of commercial positions on the NYMEX.

Bank Platinum Futures Positions



Bank Palladium Futures Positions



194. A short position on the NYMEX or a bank's hedge book is an undertaking to deliver platinum or palladium to a buyer for deferred, or, less commonly, immediate delivery. If a bank is "short" in its hedge book or NYMEX position, that bank will profit (or lose less) if the platinum or palladium price declines.

195. By maneuvering the Fixing towards lower prices over time, the Defendants have worked throughout the entire Class Period to affect lower prices for platinum and palladium than would otherwise have prevailed in a free and openly competitive market.

196. The Defendants were motivated to engage in coordinated manipulation of the Fixing by the strong financial incentive created by their "short" positions.[65] A comparison of the banks' net positions with the direction of the Fixes, which the Fixing Defendants controlled, reveals that the direction of the Fix prices is much more strongly correlated with the banks' net position than it is with the overall direction of the market on a given day. Plaintiffs' tests found this to be true to a statistically significant degree.

197. As seen in investigations into other similar benchmarks, the Defendants were also motivated to trigger – or avoid triggering – "stop loss" orders and "margin calls" for their own benefit. A stop-loss order is a specified level at which a financial product (or commodity) should be sold to limit potential losses. Clients place stop-loss orders with entities such as Defendants to help manage the risk arising from movements in platinum and palladium prices. By accepting these orders, the Defendants agreed to transact with the client at a specified price if the platinum

[65] Defendant BASF, in addition to its motive as a trader in platinum and palladium, was also motivated by its desire to keep prices of platinum and palladium low because both metals are used as raw materials in products manufactured by BASF (and its related corporate entities) including catalytic converters. The lower the prices of platinum and palladium, the more BASF stood to profit on its sales of finished products that incorporate these precious metals. Thus, BASF's interest in driving down prices of platinum and palladium was aligned with the other Defendants.

or palladium benchmark reached that price.

198. A margin call is a demand from a broker to an investor to deposit additional funds or securities so that the investor's margin account is raised to a certain level. Margin calls are made when the funds or securities in an investor's margin account need to be raised because they have fallen below a certain level calculated by the broker as being necessary to cover potential losses. By manipulating the AM and PM Fixing, the Defendants frequently were able to trigger (or avoid triggering) such orders, avoiding much of the risk in such obligations. The Defendants were also able to make margin calls that otherwise would not have been made.

199. And there are many other ways that the Defendants could have profited, regardless of their overall stake in platinum and palladium at the onset of a given day, profited off of foreknowledge that a price spike was coming. Notably, because Defendants controlled the levers to the market and had established their reliability, such returns were essentially *risk-free* profits.

200. For instance, the Defendants were also large participants in the market for physical platinum and palladium. Downward spikes at the Fixing allowed them to buy platinum and palladium cheaper than they would have been able to – creating an opportunity to profit if and when platinum and palladium went up as the effects of the suppression abated. The Defendants can and did profit from their manipulation in this way, at the expense of members of the Class.

201. The Defendants were also large participants in the market for Fix price-denominated derivatives. These contracts, like those for physical sales of platinum and palladium, directly incorporate the Fix price in order to determine the cash flows between the parties. Suppressing the Fix price during the Fixing would thus make one participant profit, at

the expense of the other. The Defendants can and did profit from their manipulation in this way, at the expense of members of the Class.

202. The Defendants were also large participants in the market for such contracts as "digital options," and have contracts that have similar market-based triggers such as "stop loss" orders[66] and "margin" calls.[67] These contracts in various forms require the Defendants to act, or not act, based on whether the price of platinum and palladium crosses a specific threshold. By accepting these orders, the banks agreed to transact with the client at a specified price if the platinum and palladium benchmark reached that price. By manipulating the Fixing, Defendants frequently were able to trigger (or avoid triggering) such orders, avoiding much of the risk in such obligations. The Defendants were also able to make margin calls that otherwise would not have been made. The Defendants can and did profit from their manipulation in this way, at the expense of members of the Class.

203. That the Defendants easily realized profit from the joint manipulation of a financial benchmark – despite any supposed divergences of interest between them, caused by any supposed differences in the makeup of their platinum and palladium portfolios – is confirmed by the fact that similar financial institutions, in similar circumstances, have already admitted to similarly *jointly* manipulating important financial benchmarks. In the LIBOR context, many of the world's leading banks, including some of these same Defendants, *admitted to* manipulating a key financial interest-rate benchmark, including by way of *collusion* between their respective

[66] A stop-loss order is a specified level at which a financial product (or commodity) should be sold to limit potential losses. Clients place stop-loss orders with entities such as Defendants to help manage the risk arising from movements in platinum and palladium prices.

[67] A margin call is a demand from a broker to an investor to deposit additional funds or securities so that the investor's margin account is raised to a certain level. Margin calls are made when the funds or securities in an investor's margin account need to be raised because they have fallen below a certain level calculated by the broker as being necessary to cover potential losses.

traders.[68] In the currency-exchange markets, many of the world's leading banks, including some of these same Defendants,[69] *admitted* that their traders would *collude* to move the markets in advance of the setting of key currency benchmarks. These examples are not just offered to show the recent corruption of the benchmarking process, but to further negate any claim that a conspiracy to manipulate a financial benchmark would have been unworkable due to the purported differences between the participants' individual financial interests.

D. Even "Balanced" – or "Hedged" – Portfolios Present the Opportunity to Profit from Price Spikes

204. As discussed above, the available data shows that the majority of the Defendants had massive, short, futures positions. Even *if* those were offset with "long" positions elsewhere – which, Plaintiffs do not at all concede – the Defendants would *still* be heavily motivated to cause downward spikes in the price of platinum and palladium. This is because not all types of palladium investments have their *value* impacted in the same way.

205. The simplest example would be a "balanced" portfolio that contains some physical platinum and palladium (a long investment) and some short futures. Platinum and palladium futures are marked-to-market daily, requiring daily cash margin payments on any change in value prior to the settlement date for the future. This generates daily cash flows for the holder of the futures contract if the market moves in favor of the holder's position. In contrast, holding physical platinum and palladium does not generate cash flows. And physical platinum and palladium could be held, particularly in a time of otherwise rising prices, until the effects of any downward suppression had abated. Thus, even a "balanced" portfolio would be a profit

[68] *See* Michael Ovaska and Margot Patrick, *The Libor Settlements*, The Wall Street Journal (undated), www.wsj.com/articles/SB10001424127887324616604578302321485831886.

[69] *See* Daniel Schafer, Carline Binham, Kara Scannel, *Regulators slap $4.3bn fine on six banks in global forex probe*, Financial Times (Nov. 12, 2014), www.ft.com/intl/cms/s/0/aa812316-69be-11e4-9f65-00144feabdc0.html.

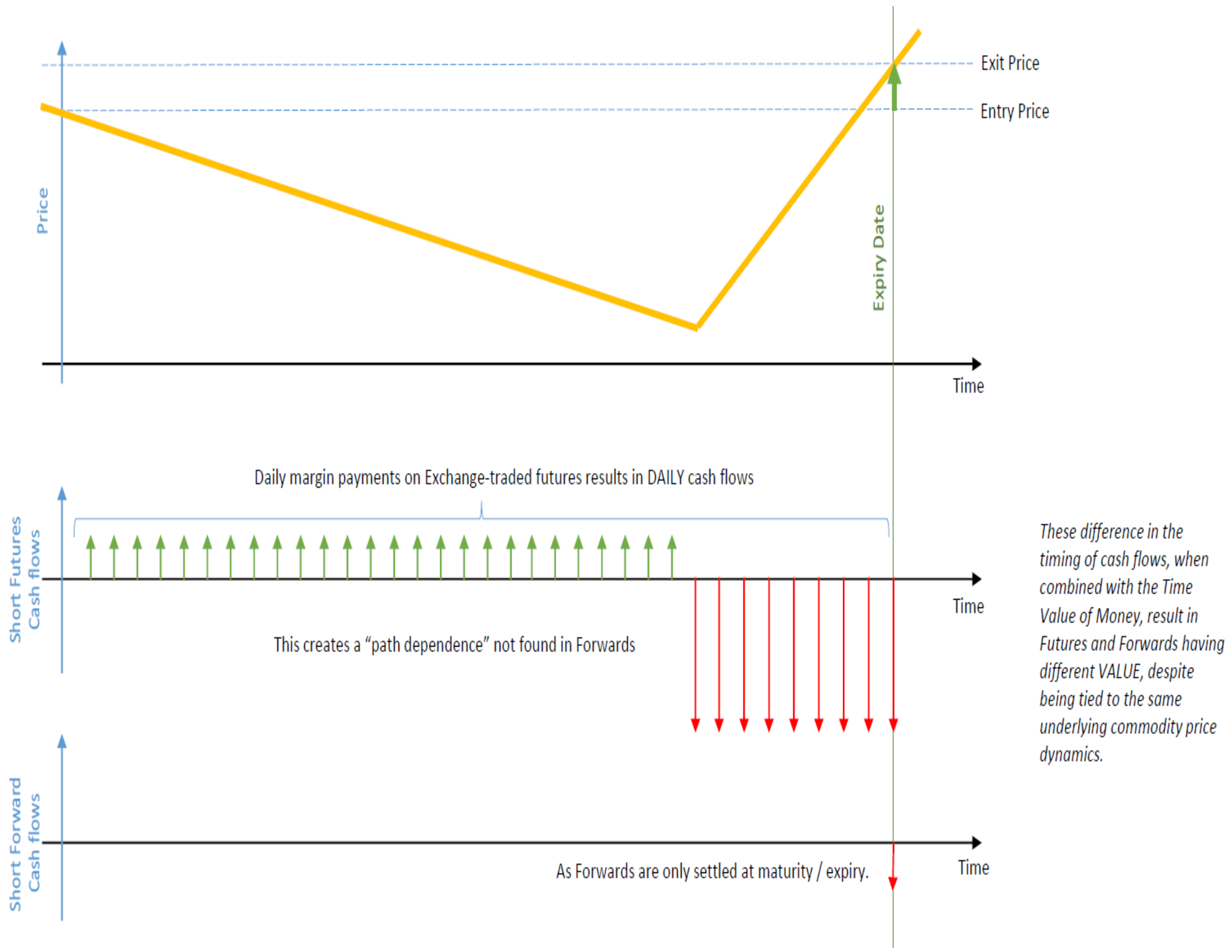
machine to Defendants holding short futures positions given they were repeatedly causing daily downward spikes in the price of platinum and palladium. The futures contract would throw off margin payment cash *daily* (or at least would require the owner to make lower margin payments than they otherwise would), which created real-world value for Defendants even if the physical platinum and palladium on their books had become theoretically worth less when sold at some future date.

206. But that is of course not all of the picture. Defendants control when they buy and sell physical platinum and palladium. They thus profited even apart from the value created by the differing timing of cash flows, by using the price spike downward to buy *even more* physical platinum and palladium, at cheaper prices. This additional purchased platinum and palladium, and their pre-existing inventory of physical platinum and palladium, were simply held until the effects of the downward manipulation had abated.

207. The same conclusion – that even a "balanced," or "hedged," portfolio represents a motivation to manipulate in the way Defendants here did – can be seen in the derivatives market as well. Again, a future is marked-to-market daily, requiring daily cash margin payments on any change in value. As above, the Defendants had *massive* "short" futures positions. Thus, pressing the price of platinum and palladium down created daily positive margin payment cash flows for themselves. This created value, again, even if the Defendants had offset those short *futures* positions with technically "offsetting" (in the regulatory sense) long *forward* positions. This is because forwards only generate cash flows upon expiry. Again, receiving cash in hand today is a valuable thing, even if the same amount of cash is "lost" at some point in the future.

208. For instance, a portfolio consisting of one "short" future and one "offsetting" "long" forward would still increase in value if the price of platinum and palladium went down,

due to the fact that the future was throwing off cash margin payments on a daily basis,[70] as seen below:



209. As discussed above, the Fixing represented the perfect opportunity for Defendants to collude, to maximum guaranteed effect. Although futures mark-to-market to the price of platinum and palladium after the Fixing, the impact of Defendants' manipulation was still very much still being felt when the cash-flows for the futures were being calculated. The effect of the Fix price's large spike lingered beyond the Fixing window, and up to (and through) the time of

[70] For simplicity, the allegations here discuss an increase in margin payment cash flows due to suppression. But even if shorts were not generating such cash flows because prices were overall going up, suppressing the price would still create a daily, cash-benefit for the Defendants because they would lose less cash to margin payments than they otherwise would have.

day when the margin payment cash flows for the Defendants' large short futures positions would be calculated.

210. The profitability of a futures-focused scheme is further confirmed by the fact it can be highly leveraged. Platinum and palladium futures contracts typically only require participants like Defendants to post 4% (or less) of the notional amount of that contract. Stocking up on futures thus not only presented the opportunities to alter the *daily* cash flows in the Defendants' favor, as discussed above, but also the opportunity to do so by deploying far less capital at the outset than required for other types of Platinum and Palladium Investments, such as buying physical platinum and palladium.

211. Another reason why an allegedly "balanced" bank would still be motivated to profit, even apart from the differences in timing of the resulting cash flows between purportedly "offsetting" positions, is that the motivation for manipulation operated not just on the bank level, but on department and even personal level. Departments and employees within each Defendant have their performance measured separately. Traders and departments responsible for COMEX short positions thus sought to maximize the returns (or limit the losses) of futures short positions, regardless if those positions were initially instituted to hedge the investments of a different arm of the bank. Again, as seen in the LIBOR, currency-change, and other contexts already, the temptations to manipulate at a departmental and individual level often carried the day, regardless of what the larger institution later would claim to have been in its overall financial interest.[71]

[71] As demonstrated by the "London Whale" fiasco, even where a Bank's interests were contrary to those of an employee trader, it is not clear that the Banks had the necessary oversight in place to monitor their traders' positions. *See, e.g.*, Patricia Hurtago, *The London Whale*, Bloomberg (March 5, 2015), www.bloombergview.com/quicktake/the-london-whale.

E. The Defendants' Manipulative Conduct Caused Sustained Price Suppression of Platinum and Palladium Prices

212. As the economic evidence shows, the Defendants' manipulative conduct to suppress platinum and palladium prices around the AM and PM Fixing caused prices to be artificially lower throughout the Class Period than if set by free and open competition. This evidence includes the following facts:

a. Prices dropped during the AM and PM Fixing many more times than they increased during every year in the Class Period;

b. The AM and PM Fixing prices were among the lowest spot prices of the day much more often than they were among the highest spot prices of the day during every year in the Class Period;

c. The Defendants' quoted prices were significantly lower than those of other market participants around the AM and PM Fixing for every year in the Class Period;

d. There was a significantly large drop of average prices around the AM and PM Fixing, which is not only due to episodic manipulation but also reflects the sustained price suppression outlined above;

e. Throughout the Class Period average price changes during the AM and PM Fixing were consistently negative, even when average price changes throughout the day were sustainably positive; and

f. The Defendants had the motive to sustainably suppress prices throughout the Class Period in order to benefit their systematic short positions.

213. As a consequence, the harm suffered by Plaintiffs is not restricted to those specific days on which the most striking downward price drops occurred during the AM and PM

Fixing, but instead extends throughout the Class Period.

V. **NUMEROUS PLUS FACTORS ARE PROBATIVE OF COLLUSION IN CONNECTION WITH THE FIXING**

214. The structural design of the Fixing was a perfect storm of features that invite and promote manipulation and collusion, allowing such behavior to go unnoticed. These factors are discussed below and also summarized in the attached Appendix E.

215. *First*, the Fixing was a *direct and frequent exchange of intended or future price information* among horizontal competitors. The Defendants compete across a wide range of financial services markets, including the markets for platinum and palladium and platinum and palladium derivatives. The Defendants compete to attract customers, including those that trade platinum and palladium, platinum and palladium futures and options, platinum and palladium derivatives, and shares of Platinum and Palladium ETFs and they compete against each other in the proprietary trading of platinum and palladium. Despite the fact that they are competitors, the Fixing Defendants communicated *directly and privately* before and during the Fixing to set the price of platinum and palladium. Through this exchange of price impacting information, the Defendants had ample opportunity to signal pricing desires to their competitors, and even to directly decide what the Fix prices would be.

216. *Second,* this exchange of pricing information took place among a *very small group of competitors* with large market shares in the markets for platinum and palladium, platinum and palladium futures and options, and platinum and palladium derivatives. Unlike a benchmark price based on market-wide data, the Fixing vested control over the price-setting process in the hands of a small group of competitors, making it easy for them to influence prices. This structure made collusion a rational strategy for increasing profits at the expense of the vast majority of the market that does not have the opportunity to set the spot price.

217. *Third*, the Defendants' communications with each other – such as the sharing of client orders and imminent orders – represent *undisclosed* communications, meaning the Defendants had *access to nonpublic, real time information* about changes in the prices of platinum and palladium. This access to non-public information not only presented the Defendants with unique informational advantages in the markets for Platinum and Palladium Investments, as detailed below, but it also meant the markets could not monitor the Defendants' conduct in setting the price of platinum and palladium.

218. *Fourth*, the Defendants had a *direct financial interest in the outcome* of the Fixing. The Defendants were not neutral participants in the Fixing. They are traders of platinum and palladium on the spot market and during the Class Period they had large short futures positions on NYMEX. As a result, they had a strong incentive to influence the prices of the Fixing in a particular direction.

219. *Fifth*, the structure of the Fixing meant that the Fixing Defendants were *easily able to detect – and if necessary, retaliate against – defectors*: all the Fixing Defendants would have known if any other Defendant attempted to "break the cartel" because all Fixing Defendants were aware of the net demand represented by other Fixing Defendants during the Fixing process, and of how that representation would affect the Fix prices that the Fixing Defendants agreed to that day. Because the Fixing occurred twice daily, if any one Fixing Defendant selfishly deviated from a pre-arranged level of net demand during the Fixing (*i.e.*, represented a level of demand that would have the effect of moving the Fix prices other than toward the agreed artificial price), other Fixing Defendants would have had ample opportunity to extract revenge.

220. *Sixth*, until recently (following the launch of the investigations discussed above) there was *no independent administration or oversight* of the Fixing. Unlike other benchmarks

that are administered by third parties, which compile quotes or use real-time data, the Fixing involved only the Fixing Defendants themselves, and was not overseen by any independent entity. No one was charged with monitoring the Fixing and guarding against manipulation or ensuring that information was not misused.

221. Indeed, a recent regulatory investigation concluded that a lack of training and oversight of the Precious Metals Desk (which also trades platinum and palladium) had led to price manipulation by Barclays (a market-making LPPM member) in a very similar context: "Precious Metals Desk staff had not been given adequate training or guidance regarding what they were, or were not, permitted to do during the Gold Fixing."[72] They were given no guidance "on the circumstances in which they were or were not allowed to participate in the Gold Fixing and the circumstances in which they were or were not allowed to place proprietary trades whilst the Gold Fixing was taking place."[73] Likewise, at all relevant times there was no oversight whatsoever over the Fixing by any U.K. or foreign regulatory agency. These deficiencies in training and oversight with respect to gold apply equally to all precious metals traded by the Precious Metals Desk including platinum and palladium.

222. Collectively, these structural or "plus" factors created a situation where collusion was most likely to occur, including because – until recently – there were no negative consequences to Defendants and their co-conspirators' decision to collude as competitors and thereby manipulate the Fixing – only rewards. For good reasons, no other benchmark price (besides the gold and silver fixings) involves such unrestricted, direct price-setting among horizontal competitors. The U.S. Senate captured the crux of the issue when it stated that

[72] U.K. Financial Conduct Authority, *Final Notice to Barclays Bank plc* (May 23, 2014), at 3.1 (definition of "Precious Metals Desk"), www.fca.org.uk/static/documents/final-notices/barclays-bank-plc.pdf.

[73] *Id.*, at 4.31.

commodity activities such as those at issue here were "permeate[d]" by "conflicts of interest."[74] As alleged herein, Defendants seized upon this structure to manipulate the price of platinum and palladium in secret without fear of retribution until very recently.

VI. ONGOING GOVERNMENT INVESTIGATIONS CORROBORATE PLAINTIFFS' ALLEGATIONS

A. Multiple Investigations Are Underway Worldwide

223. As noted above, the DOJ and CFTC are both actively investigating Defendants' and potential co-conspirators' manipulation of the price-setting mechanisms in precious metals markets, including specifically the platinum and palladium markets.[75] As part of that investigation, on November 14, 2014, the DOJ issued a document request to HSBC Holdings seeking "documents relating to a criminal antitrust investigation that the DOJ is conducting in relation to precious metals."[76] In January 2015, the CFTC issued a subpoena to HSBC Bank USA seeking "documents related to HSBC Bank USA's precious metals trading operations."[77] The DOJ and CFTC have also issued document requests and subpoenas to other entities in connection with these investigations.

224. Switzerland's financial regulator FINMA has found "serious misconduct" by Defendant UBS in precious metal trading. Indeed, FINMA's chief executive officer recently stated that the regulator has "seen clear attempts to manipulate fixes in the precious metals

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[74] Senate Report, *supra* n.12, at 38.

[75] *See* Jean Eaglesham and Christopher M. Matthews, *Big Banks Face Scrutiny Over Pricing of Metals: U.S. Justice Department investigates price-setting process for gold, silver, platinum, and palladium*, The Wall Street Journal (Feb. 23, 2015), www.wsj.com/articles/big-banks-face-scrutiny-over-pricing-of-metals-1424744801; *see also* Jan Harvey, *CFTC subpoenaed HSBC Bank USA for documents on metals trading*, Reuters (Feb. 23, 2015), http://www.reuters.com/article/2015/02/23/us-precious-hsbc-cftc-idUSKBN0LR1C520150223.

[76] HSBC Holdings PLC, 2014 Annual Report, at 454.

[77] *Id.*

markets."

225. The Swiss competition commission WEKO has also recently announced that it is actively investigating precious metal fixings, and price-fixing manipulation specifically.[78]

226. The CFTC, U.K. Financial Conduct Authority, and the German financial regulator BaFin also launched probes into benchmark price manipulation in the context of other precious metals.

227. Joaquin Almunia, the former European Union's antitrust chief, also reportedly conducted a preliminary probe into "possible foreign-exchange manipulation"[79] (which included gold and silver as they are considered "currencies"), with Mr. Almunia commenting to the *Financial Times* that "perhaps manipulation [of benchmarks] is not the exception but the rule."[80]

228. A recent report by the U.S. Senate Permanent Subcommittee on Investigations documented conduct strikingly similar to that alleged by Plaintiffs across a wide range of commodities. It noted that across the activities investigated, "financial companies often traded in both the physical and financial markets at the same time, with respect to the same commodities, frequently using the same traders on the same trading desk. In some cases, after purchasing a physical commodity business, the financial holding company ramped up its financial trading. . . . In some cases, financial holding companies used their physical commodity activities to influence

[78] *See* Joshua Franklin, *Swiss watchdog says looking at possible gold market manipulation*, Reuters (Feb. 24, 2015) http://uk.reuters.com/article/2015/02/24/swiss-banks-probe-idUKFWN0VY02X20150224

[79] Karin Matussek and Oliver Suess, *Metals, Currency Rigging is Worse Than Libor, Bafin says*, Bloomberg (Jan. 17, 2014), www.bloomberg.com/news/2014-01-16/metals-currency-rigging-worse-than-libor-bafin-s-koenig-says.html.

[80] Daniel Schäfer, Neil Hume and Xan Rice, *Barclays fined £26m for trader's gold rigging*, Financial Times (May 23, 2014), www.ft.com/cms/s/0/08cafa70-e24f-11e3-a829-00144feabdc0.html.

or even manipulate commodity prices."[81]

229. Another problem the Senate Report focused on was the "conflicts of interest between a bank and its clients" when banks mix the business of banking with commerce. The report found that "[p]ossible conflicts of interest permeate virtually every type of commodity activity" and illustrated the point with the following hypothetical: "If the bank's affiliate operates a commodity-based exchange traded fund backed by gold, the bank may ask the affiliate to release some of the gold into the marketplace and lower gold prices, so that the bank can profit from a short position in gold futures or swaps, even if some clients hold long positions."[82]

230. As noted above, the Senate Report specifically discussed Defendant Goldman Sachs's extensive involvement in physical commodities and related derivatives including its involvement in the platinum and palladium markets.[83]

231. Thus, much of the collusive, manipulative conduct described above has been confirmed by government regulators both domestically and abroad.

B. FINMA Found Commodity Metals Problems at UBS

232. At the end of September 2013, Defendant UBS informed Switzerland's financial regulator FINMA and a number of other domestic and foreign supervisory and competition authorities that an internal investigation had uncovered possible signs of manipulation, collusion and other market abusive conduct in foreign exchange trading.

233. In October 2013, FINMA initiated enforcement proceedings against UBS on the

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[81] Senate Report, *supra* n.12, at 5.

[82] *Id.* at 37-38. Similarly, each of the case studies documented in the Senate Report uncovered evidence that banks "used their physical commodity activities to gain access to commercially valuable nonpublic information that could be used to benefit their financial trading activities." *Id.* at 6.

[83] *Id.* at 63, 115-17.

grounds of suspected market abuse in foreign exchange trading.

234. In January 2014, Andre Flotron, the head of UBS's precious metals desk in Zurich, was placed on leave for unspecified reasons.

235. In May 2014, UBS disclosed that it had widened its internal investigation to include its precious metals business.

236. On November 11, 2014, FINMA released the results of its investigation into foreign exchange and precious metals trading at UBS. The FINMA report noted the close association between UBS's foreign exchange and precious metals trading desks, "The [precious metals] spot desk responsible for the bank's precious metals trading has been an organizational unit of the bank's Foreign Exchange Spot Desk since the end of 2008 and was therefore subject to similar control and monitoring processes." [84] The Swiss regulator found that UBS's foreign exchange currency dealers had "repeatedly and over a longer period of time tried or accepted repeated attempts to manipulate foreign currency reference values by the aggressive execution of large volume orders in order to generate a profit for themselves, the bank or for third parties;" and entered "agreements with other banks in regards to a possible influencing of the foreign currency reference values," following which the traders "congratulated each other [in chat rooms] on assumedly successfully moving a benchmark . . . in a desired direction."[85]

237. UBS's precious metals and foreign exchange businesses are closely integrated. The business units have joint management and UBS's precious metals staff sit on the same floor as the foreign exchange traders. As noted above, UBS has precious metals trading desks in the U.S. (through UBS Securities LLC) and abroad.

238. Specifically, FINMA found that UBS's precious metals traders had engaged in:

[84] FINMA Report, *supra* n.7, at 12.

[85] *Id.*

(i) sharing information on order books with third parties (*e.g.*, stop loss orders); (ii) sharing so-called "flow information" with third parties on large current or imminent orders; (iii) sharing client names with third parties; (iv) front running; and (v) triggering stop loss orders. FINMA concluded that UBS's "compliance function in foreign exchange and precious metals trading was insufficient."[86]

239. FINMA also noted problems with proprietary or "back book" trading at UBS. FINMA noted that such proprietary trading leads to conflicts of interest with UBS's clients especially because traders' compensation was set in part based on the success of the proprietary trading. FINMA noted that, "A substantial element of the conspicuous conduct in [precious metals] trading was the repeated front running (especially in the back book) of silver fix orders of one client."[87] FINMA noted that with those particular episodes, "Owing to the frequency and obviousness of front running in the back book, the desk supervisors saw themselves forced – after some time of passive inactivity – to prohibit front running in the back book, but did not sanction the traders who engaged in it."[88]

240. FINMA found that this conduct was tolerated or even engaged in by managers with responsibility for overseeing precious metals traders.

C. <u>Other Relevant Findings</u>

241. Defendants' conduct at issue in this case is part of a larger set of revelations emerging about banks in the context of financial benchmarks. The manipulation alleged is nearly ubiquitous, cutting across what were previously thought to be distinct markets and entities (regarded even as competitors). For instance, as outlined in part above, Defendants HSBC and

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[86] *Id.* at 16.

[87] *Id.* at 12.

[88] *Id.* at 12.

UBS along with Citibank, J.P. Morgan, and The Royal Bank of Scotland were each recently subject to multiple investigations resulting in substantial fines in connection with their conspiring to manipulate Forex benchmarks. Among the conduct these banks have admitted to engaging in was disclosure of confidential customer order information and trading positions, adjustment of trading positions to accommodate the interests of the collective group, trading to trigger customers' limit orders or customers' barrier options for the bank's benefit and to the detriment of those customers, and agreeing to enter into trading strategies to manipulate benchmark prices.

242. As noted by FINMA, Defendants' collusion in the context of precious metals occurred in ways similar and, at times, nearly identical to those revealed by recent regulatory investigations into manipulation of other benchmarks, including in the foreign exchange market. Among the banks targeted by such investigations are Defendants HSBC and UBS.

243. HSBC recently settled with the CFTC over its manipulation of Forex (also known as "FX") benchmarks. The CFTC found that HSBC and other banks used private chat rooms to communicate and plan their manipulation.[89] During these communications, HSBC traders disclosed confidential customer order information and trading positions, altered trading positions to accommodate the interests of the collective group, and agreed on trading strategies as part of an effort by the group to attempt to manipulate Forex benchmark rates. The manipulation occurred, according to the CFTC, because HSBC failed to adequately assess risks and lacked internal controls to detect and deter misconduct.

244. HSBC also recently resolved similar charges by the U.K. FCA. The FCA found

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[89] U.S. Commodity Futures Trading Commission, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of HSBC Bank plc* (Nov. 11, 2014), at 2, www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enfhsbcorder111114.pdf.

that HSBC attempted to manipulate foreign exchange rates in collusion with traders at other firms for HSBC's benefit and to the detriment of clients and/or other market participants. HSBC also shared confidential client information with other firms and attempted to trigger clients' stop loss orders for its own benefit and to the detriment of those clients and/or other market participants.[90] Echoing the FCA findings regarding Barclays and the gold fixing, the FCA found that HSBC did not adequately manage risk, in part by failing to discharge its responsibilities with regard to confidentiality, conflicts of interest, and trading conduct.[91]

245. Former precious metals traders interviewed by the press have stated that "there has long been an understanding among [bullion banks] that sellers and buyers of digitals would try to protect their positions if the benchmark price and barrier were close together near expiry."[92] Four traders interviewed by *Bloomberg News* said that it was "common practice" among bullion banks to move prices to profit or limit losses.[93]

246. Given the admissions of wrongdoing by, among others, Defendants HSBC and UBS in Forex and other markets, statements of the U.S. Senate including statements concerning Defendant Goldman Sachs, findings by FINMA about Defendants UBS's attempts to manipulate precious metals, the statements of former precious metals traders in response to developments,

[90] U.K. Financial Conduct Authority, *Final Notice to HSBC Bank plc* (Nov. 11, 2014), at 3, www.fca.org.uk/your-fca/documents/final-notices/2014/hsbc-bank-plc.

[91] *Id*. The CFTC has also released multiple examples of trader misconduct in private chat rooms by which Forex-trading banks – including Defendant HSBC – were able to profit from manipulation of currency benchmarks. *See* Commodity Futures Trading Commission, *Examples of Misconduct in Private Chat Rooms* (Nov. 11, 2014), www.cftc.gov/ucm/groups/public/@newsroom/documents/file/hsbcmisconduct111114.pdf.

[92] Xan Rice, *Trading to influence gold price fix was 'routine,'* Financial Times (June 3, 2014), www.ft.com/intl/cms/s/0/7fd97990-eb08-11e3-9c8b-00144feabdc0.html.

[93] Dave Michaels, Suzi Ring and Julia Verlaine, *Barclays Fine Spurs U.K. Scrutiny of Derivatives Conflict*, Bloomberg (June 5, 2014), www.bloomberg.com/news/2014-06-05/barclays-fine-leads-to-new-u-k-scrutiny-of-derivatives-conflict.html.

and the strikingly similar incentives and opportunities in the platinum and palladium markets as others shown to be manipulated, all coupled with the extensive empirical analysis presented above, the Defendants' wrongdoing in the platinum and palladium markets is more than plausible.

VII. DEFENDANTS' CONDUCT RESTRAINED TRADE, DECREASED COMPETITION, AND ARTIFICIALLY LOWERED PRICES, THEREBY INJURING PLAINTIFFS

247. As described above, the prices of Platinum and Palladium Investments – including as set by the AM and PM Fixing – are highly correlated. As a result, manipulation of the Fixing by the Defendants impacted these transactions and caused Plaintiffs and the Class to incur greater losses and/or realize lower prices than they would have realized in a free and open competitive market.

248. The Defendants' conduct constitutes a *per se* violation of the antitrust laws because of its clear and obvious likelihood to inflict anticompetitive impact and economic injury. Defendants operated as a secretive cartel and engaged in a price-fixing scheme that inherently reduced the free and unfettered competition the Sherman Act was designed to preserve and promote. Defendants' scheme to fix the benchmark price at artificially suppressed levels directly and immediately impacted the market for Platinum and Palladium Investments (a market in which Defendants participate).

249. The Defendants hold themselves out as horizontal competitors (as buyers, sellers, and brokers) in the market for Platinum and Palladium Investments. As such, they should compete *against* each other when trading either their own proprietary books or the assets and investments of their clients. The fact that the Fixing Defendants participated in the Fixing did not give them permission to suspend this competition. Indeed, the Fixing was intended to yield market outcomes that depended on the Fixing Defendants operating as competitors. Instead of

acting as competitors, however, the Defendants agreed to restrain trade in order to pursue collective goals and to manipulate the market by collusion and coordination, as described above. The Defendants' collusive price fixing was inimical to competition and restrained trade in the affected market (and any applicable submarkets).

250. As explained above, the AM and PM Fixing was supposed to be – and was understood by market participants as being – a reliable benchmark price for platinum and palladium, including the market for Platinum and Palladium Investments, because it reflected actual market supply and demand. This was the case for at least two reasons.

251. *First*, the chair for the AM and PM Fixing were supposed to commence the Walrasian auction process used in the Fixing by announcing (and then soliciting supply or demand levels from Defendants in response to) a figure that was the then-prevailing US Dollar spot price for platinum and palladium. That is, *the starting point* for each day's AM Fixing was held out to be the spot price of platinum and palladium at 9:45 a.m. in London and the PM Fixing was held out to be the spot price of platinum and palladium at 2:00 p.m. in London. The spot price for platinum and palladium is the price for delivered physical platinum and palladium, and thus – ultimately – the price upon which all Platinum and Palladium Investments are based.

252. *Second*, the auction that followed the Chair's announcement of the prevailing spot price was supposed to be a *genuine* and *competitive* auction, based on *actual market supply and demand* for platinum and palladium. The Fixing Defendants were supposed to announce whether they were buyers or sellers at the chair's price based on net supply/demand for spot platinum and palladium from their order books. This supply and demand was supposed to consist of orders from customers – market participants free to place orders with any Fixing Defendant if one Fixing Defendant's prices were not sufficiently competitive – and/or orders

from the Fixing Defendants themselves, where the Fixing Defendants were engaging in proprietary trading, acting as direct market participants.

253. Trade was accordingly restrained and competition decreased in the market for Platinum and Palladium Investments by any manipulation of either: (1) the price at which the Chair commenced the AM and PM Fixing on a given day, or (2) the levels of market supply and demand that moved the AM and PM Fix price to the level at which it was ultimately fixed. As shown above, however, the Defendants repeatedly colluded to ensure there was coordinated manipulation and fixing of both the opening price and the quoted buy/sell levels.

254. The Defendants colluded to manipulate the price at which the chair opened the Fixing on a given day by placing “spoof orders,” engaging in “wash sales,” as well as collusively sharing and acting on non-public information regarding client orders (including stop-loss orders) shortly before and during the AM and PM Fixing. They did this in order to manipulate the spot price for platinum and palladium, and thus the “prevailing” price that the Chair would announce at commencement of the Fixing.

255. The Defendants also colluded to manipulate the actual levels of market supply and demand quoted by the Fixing’s members – and thus the direction and extent of any movement of the starting price during the Fixing – by the means described in the preceding paragraph as well as by falsely representing the net supply or demand on their order books, or by “netting off” or “building” certain orders before the Fixing commenced.

256. Additionally, Defendants – and co-conspirators who were not members of the Fixing – colluded to manipulate the market for Platinum and Palladium Investments in the ways described above at times of the day other than around the AM and PM Fixing.

257. These schemes were undertaken for the purpose of manipulating the benchmark

price that would be reached by that day's Fixing, or otherwise artificially to lower the price of Platinum and Palladium Investments. The resulting price movements had a significant impact on prices for platinum and palladium spot and for any Platinum and Palladium Investments connected to or affected by the spot prices for platinum and palladium, and thus by the AM and PM Fixing.

258. Defendants' ability to influence the AM and PM Fixing benchmark price, including by way of manipulation of the price at which the AM and PM Fixing would commence, is amply demonstrated by the structure of the Fixing and the empirical evidence discussed above. Thus, the Defendants have considerable power over the market for Platinum and Palladium Investments, including those which expressly reference or in practice rely on the Fixing price.

259. Accordingly, to the extent that Defendants and their co-conspirators' collusive manipulation artificially lowered prices in the spot market for platinum and palladium or as reached by the AM and PM Fixing, it also artificially lowered prices in the broader market for Platinum and Palladium Investments, including because prices for each of the Platinum and Palladium Investments implicitly and expressly followed the AM and PM Fixing price. Defendants' collusive manipulation of the above-described market was, intended to and did increase their profits, and occurred throughout the Class Period, including on the days identified in Appendices A and B. Defendants' collusive manipulation also had an overall depressive effect on platinum and palladium prices throughout the Class Period.

260. Plaintiffs were sellers in the market for Platinum and Palladium Investments, and were affected by movements in prices in the platinum and palladium spot market, and by the price set by the AM and PM Fixing.

261. Defendants and their co-conspirators' collusive manipulation artificially lowered prices in the market for Platinum and Palladium Investments. As sellers in that market, Plaintiffs thus received lower sales prices than they would have received in a competitive market free of Defendants' collusive and manipulative conduct.

262. As a direct result of Defendants and co-conspirators' conduct, Plaintiffs were injured in their business or property and suffered harm in respect to the sales they conducted where the relevant sales price was artificially lowered by collusive manipulation.

VIII. EQUITABLE TOLLING OF THE STATUTE OF LIMITATIONS DUE TO DEFENDANTS' CONCEALMENT OF THE CONSPIRACY

263. Defendants and their co-conspirators concealed their wrongdoing in manipulating the Fixing. Thus, the statute of limitations relating to the claims for relief alleged herein was tolled, due both to Defendants' and their co-conspirators affirmative acts of concealment and the inherently self-concealing nature of their private, unregulated conduct.

264. Defendants' and their co-conspirators' success in concealing their collusion was facilitated by their tremendous control over global financial markets and the platinum and palladium markets in particular.

265. Neither Plaintiffs nor the Class knew of Defendants' and their co-conspirators' unlawful and self-concealing manipulative acts and could not have discovered them by the exercise of reasonable due diligence, if at all, at least prior to public reports of government investigations. Plaintiffs and the Class also lacked any basis for identifying the wrongdoers or calculating damages before that date. Indeed, Defendants' and their co-conspirators' conduct concerning the Fixing was so well hidden that Defendants and their co-conspirators kept global regulators unaware of such conduct for years.

266. Following the reports of government investigations into the platinum and

palladium markets becoming public, Plaintiffs undertook investigation into possible manipulation of the Fixing, retained counsel, and retained economic consulting experts to undertake sophisticated economic investigation of the Fixing and whether they were subject to manipulation by Defendants and their co-conspirators.

267. Reasonable due diligence could not have uncovered Defendants' and their co-conspirators' manipulative conspiracy because: (i) the Fixing was held out as being set by an impartial auction based on market factors; (ii) the Fixing was conducted in private; (iii) Defendants' and their co-conspirators' trading positions and trading strategies are not public information; (iv) the bilateral, non-exchange traded nature of the transactions at issue; (v) the highly specialized and esoteric nature of the different aspects of the platinum and palladium markets make it extraordinarily difficult for an ordinary person to assess improprieties; and (vi) neither Defendants nor their co-conspirators told Plaintiffs or other Class Members that they were conspiring to fix, stabilize, maintain, and/or otherwise manipulate the Fixing.

268. Defendants and their co-conspirators also took active steps to conceal evidence of their misconduct from Plaintiffs, the Class, regulators, and the public including, *inter alia*: (i) holding out the Fixing as an impartial, arms-length process that reflected competitive market factors; (ii) stating that platinum and palladium prices reflected normal market forces; (iii) maintaining the secrecy of the Fixing; (iv) avoiding any discussion in public fora of the Fixing and/or manipulation of the Fixing; (v) refusing to comment on, or affirmatively denying allegations of, manipulation reported by the press; (vi) initiating sham trades they never intended to execute in order to influence artificially the price of platinum and palladium; (vii) secretly trading their own proprietary platinum and palladium positions; and (viii) using non-public proprietary trading platforms directly to coordinate intended price movements.

269. In addition, Defendants and their co-conspirators also failed to have the proper internal controls in place to detect internal misconduct concerning the Fixing. Such internal failures made it all the more difficult for Plaintiffs, the Class, government regulators, and the public to become aware of Defendants' and their co-conspirators misconduct.

270. As a result of Defendants' and their co-conspirators' affirmative steps to conceal their improper conduct; their willful decision not to put in place proper controls to detect improper conduct; the self-concealing nature of the price-fixing conspiracy; and the resulting lack of public information about material aspects of the conspiracy, collusion, and trading based on nonpublic information, the statute of limitations was tolled for Plaintiffs' claims.

IX. CLASS ACTION ALLEGATIONS

271. Plaintiffs bring this action on behalf of themselves and as a class action under Rule 23(a), (b)(2) and (b)(3) of the Federal Rules of Civil Procedure, seeking relief on behalf of the following class (the "Class"):[94]

> All persons or entities who during the period from January 1, 2008 through November 30, 2014 (the "Class Period"): (i) sold physical platinum or palladium; (ii) sold platinum or palladium futures contracts traded on NYMEX; (iii) sold shares in platinum or palladium ETFs; (iv) sold platinum or palladium call options traded on NYMEX; (v) bought platinum or palladium put options traded on NYMEX; (vi) sold over-the-counter platinum or palladium spot or forward contracts or platinum or palladium call options; or (vii) bought over-the-counter platinum or palladium put options.
>
> Excluded from the Class are Defendants and their employees, affiliates, parents, subsidiaries, and co-conspirators, whether or not named in this Complaint, and the United States Government, and other governments.

272. Plaintiffs believe that there are many thousands of Class Members as described

[94] Pursuant to Federal Rule of Civil Procedure 23, Plaintiffs may seek to certify separate subclasses for, among other things, platinum and palladium transactions.

above, making the Class so numerous and geographically dispersed that joinder of all Class Members is impracticable.

273. There are questions of law and fact common to the Class that relate to the existence of the conspiracy alleged, and the type and common pattern of injury sustained as a result thereof, including, but not limited to:

a. Whether Defendants and their co-conspirators engaged in a combination or conspiracy to fix, raise, maintain, stabilize and/or otherwise manipulate the platinum and palladium benchmark prices in violation of the Sherman Act and/or Commodity Exchange Act;

b. The identity of the participants in the conspiracy;

c. The duration of the conspiracy;

d. The nature and character of the acts performed by Defendants and their co-conspirators in furtherance of the conspiracy;

e. Whether the conduct of Defendants and their co-conspirators, as alleged in this Complaint, caused injury to the business or property of Plaintiffs and the Class Members;

f. Whether Defendants and their co-conspirators fraudulently concealed the conspiracy's existence from Plaintiffs and the Class Members;

g. The appropriate injunctive and equitable relief for the Class; and

h. The appropriate measure of damages sustained by Plaintiffs and the Class Members.

274. Plaintiffs' claims are typical of the claims of the other Class Members. Plaintiffs and the Class Members sustained damages arising out of Defendants' common course of conduct in violation of law as complained of herein. The injuries and damages of each Class Member were directly caused by Defendants' wrongful conduct in violation of the laws as alleged herein.

275. Plaintiffs will fairly and adequately protect the interests of the Class Members. Plaintiffs are adequate representatives of the Class and have no interests adverse to the interests

of absent Class Members. Plaintiffs have retained counsel competent and experienced in class action litigation, including commodity futures manipulation and antitrust class action litigation.

276. The prosecution of separate actions by individual Class Members would create a risk of inconsistent or varying adjudications.

277. The questions of law and fact common to the Class Members predominate over any questions affecting only individual members, including legal and factual issues relating to liability and damages.

278. A class action is superior to other available methods for the fair and efficient adjudication of this controversy. Treatment as a class action will permit a large number of similarly situated persons to adjudicate their common claims in a single forum simultaneously, efficiently and without duplication of effort and expense that numerous, separate individual actions, or repetitive litigation, would entail. The Class is readily definable and is one for which records should exist in the files of Defendants and their co-conspirators, Class Members, or the public record. Class treatment will also permit the adjudication of relatively small claims by many Class Members who otherwise could not afford to litigate the claims alleged herein, including those for antitrust. This class action presents no difficulties of management that would preclude its maintenance as a class action.

CAUSES OF ACTION

CLAIM ONE

VIOLATION OF 15 U.S.C. § 1
AGREEMENT RESTRAINING TRADE

279. Plaintiffs hereby incorporate each preceding and succeeding paragraph as though fully set forth herein.

280. Defendants and their unnamed co-conspirators entered into and engaged in a

combination and conspiracy that was an unreasonable and unlawful restraint of trade in violation of Section 1 of the Sherman Act, 15 U.S.C. § 1, *et seq.*

281. During the Class Period, Defendants entered into a series of agreements to reduce competition amongst themselves by fixing and/or manipulating platinum and palladium prices before and during the Fixing and, as a result, the price of Platinum and Palladium Investments, including NYMEX futures.

282. This conspiracy to manipulate platinum and palladium market prices and the benchmark price caused injury to both Plaintiffs and the Class by depriving them of the benefit of accurate platinum and palladium benchmark prices reflecting true market conditions, as well as accurate spot platinum and palladium prices for some period during and following Defendants' unlawful conduct, and thus Plaintiffs and the Class received, upon execution of their trades, less in value than they would have received absent Defendants' wrongful conduct.

283. The conspiracy is a *per se* violation of Section 1 of the Sherman Act. Alternatively, the conspiracy resulted in substantial anticompetitive effects in the platinum and palladium markets. There is no legitimate business justification for, or pro-competitive benefits from, Defendants' conduct. Furthermore, any business justification is outweighed by the anticompetitive effects of Defendants' conduct.

284. As a direct and proximate result of Defendants' violation of Section 1 of the Sherman Act, Plaintiffs and the Class have been injured in their business and property throughout the Class Period.

285. Plaintiffs and the Class are entitled to treble damages for the violations of the Sherman Act alleged herein. Plaintiffs and the Class are also entitled to injunctive and other equitable relief, pursuant to 15 U.S.C. § 26.

CLAIM TWO

VIOLATION OF 7 U.S.C. §§ 1 *et seq.* MANIPULATION IN VIOLATION OF THE COMMODITY EXCHANGE ACT, INCLUDING CFTC RULE 180.2

286. Plaintiffs incorporate by reference and reallege the preceding allegations as though fully set forth herein.

287. By their intentional misconduct, the Defendants and their co-conspirators each violated Sections 6(c)(3) and 9(a)(2) of the Commodity Exchange Act (the "CEA"), 7 U.S.C. §§ 9(3), 13(a)(2), and CFTC Rule 180.2 adopted under the CEA ("Rule 180.2") and caused prices of exchange-traded platinum and palladium futures and options and over-the-counter platinum and palladium forwards and options to be artificial during the Class Period.

288. Defendants' and their co-conspirators' trading and other activities alleged herein constitute market power manipulation of the prices of exchange-traded platinum and palladium futures and options and over-the-counter platinum and palladium forwards and options in violation of Sections 9(a) and 22(a) of the CEA, 7 U.S.C. §§ 13(a) and 25(a), and Rule 180.2.

289. Defendants' and their co-conspirators' manipulation deprived Plaintiffs and the Class of a lawfully operating market during the Class Period.

290. Plaintiffs and others who transacted in exchange-traded platinum and palladium futures and options and over-the-counter platinum and palladium forwards and options during the Class Period transacted at artificial and unlawful prices resulting from Defendants' and co-conspirators' manipulations in violation of the CEA, 7 U.S.C. § 1, *et seq.*, and Rule 180.2, and as a direct result thereof were injured and suffered damages. Plaintiffs and each member of the Class sustained and are entitled to actual damages for the violations of the CEA alleged herein.

CLAIM THREE

VIOLATION OF 7 U.S.C. §§ 1 *et seq.*
EMPLOYMENT OF MANIPULATIVE OR DECEPTIVE DEVICE OR CONTRIVANCE IN VIOLATION OF THE COMMODITY EXCHANGE ACT, INCLUDING CFTC RULE 180.1

291. Plaintiffs incorporate by reference and reallege the preceding allegations as though fully set forth herein.

292. By their intentional misconduct, from August 15, 2011 through June 30, 2013, Defendants and their co-conspirators each violated Sections 6(c)(1) and 9(a)(2) of the CEA, 7 U.S.C. §§ 9(1), 13(a)(2), and CFTC Rule 180.1 adopted under the CEA ("Rule 180.1") and caused prices of exchange-traded platinum and palladium futures and options, and prices of the commodity underlying these instruments, to be artificial during the Class Period.

293. Defendants' and their co-conspirators' trading and other activities alleged herein constitute market manipulation of prices of exchange-traded platinum and palladium futures and options, and prices of the commodity underlying these instruments, in violation of Sections 6(c)(1), 9(a), and 22(a) of the CEA, 7 U.S.C. §§ 9(1), 13(a) and 25(a), and Rule 180.1.

294. Defendants' and their co-conspirators' manipulation deprived Plaintiffs and the Class of a lawfully operating market during the Class Period.

295. Plaintiffs and others who transacted in exchange-traded platinum and palladium futures and options during the Class Period transacted at artificial and unlawful prices resulting from Defendants' and co-conspirators' manipulations in violation of the CEA, 7 U.S.C. § 1, *et seq.*, and Rule 180.1, and as a direct result thereof were injured and suffered damages. Plaintiffs each sustained and are entitled to actual damages for the violations of the CEA alleged herein.

CLAIM FOUR

VIOLATION OF 7 U.S.C. §§ 1 *et seq.* EMPLOYMENT OF MANIPULATIVE OR DECEPTIVE DEVICE OR CONTRIVANCE IN VIOLATION OF THE COMMODITY EXCHANGE ACT, INCLUDING CFTC RULE 180.1

296. Plaintiffs incorporate by reference and reallege the preceding allegations as though fully set forth herein.

297. By their intentional misconduct, Defendants and their co-conspirators each violated Sections 6(c)(1) and 9(a)(2) of the CEA, 7 U.S.C. §§ 9(1), 13(a)(2), and CFTC Rule 180.1 adopted under the CEA ("Rule 180.1") and caused prices of exchange-traded platinum and palladium futures and options, and the price of the commodity underlying these instruments, to be artificial during the Class Period.

298. In violation of CEA Sections 6(c)(1) and 9(a)(2), and CFTC Rule 180.1, Defendants and co-conspirators caused to be delivered for transmission false, misleading, or inaccurate reports of the Fixing, *i.e.*, false reports concerning market information or conditions that affected or tended to affect both prices of platinum and palladium and prices of platinum and palladium futures and options in interstate commerce. Defendants and co-conspirators did so either knowingly, intentionally, or with reckless disregard of the fact that such reports were false, misleading, or inaccurate.

299. Plaintiffs and others who transacted in exchange-traded platinum and palladium futures and options during the Class Period transacted at artificial and unlawful prices resulting from Defendants' and co-conspirators' manipulations in violation of the CEA, 7 U.S.C. § 1, *et seq.*, and Rule 180.1, and as a direct result thereof were injured and suffered damages. Plaintiffs each sustained and are entitled to actual damages for the violations of the CEA alleged herein.

CLAIM FIVE

VIOLATION OF 7 U.S.C. §§ 1 *et seq.* PRINCIPAL-AGENT LIABILITY IN VIOLATION OF THE COMMODITY EXCHANGE ACT

300. Plaintiffs incorporate by reference and reallege the preceding allegations as though fully set forth herein.

301. Each Defendant is liable under Section 2(a)(1)(B) of the CEA, 7 U.S.C. § 2(a)(1)(B), for the manipulative acts of their agents, representatives, and/or other persons acting for them in the scope of their employment.

302. Plaintiffs and each member of the Class each sustained and are entitled to actual damages for the violations of the CEA alleged herein.

CLAIM SIX

VIOLATION OF 7 U.S.C. §§ 1 *et seq.* AIDING AND ABETTING LIABILITY IN VIOLATION OF THE COMMODITY EXCHANGE ACT

303. Plaintiffs incorporate by reference and reallege the preceding allegations as though fully set forth herein.

304. Defendants and their co-conspirators knowingly aided, abetted, counseled, induced and/or procured the violations of the CEA alleged herein. Defendants did so knowing of each other's, and their co-conspirators' manipulation of the Fixing, and willfully intended to assist these manipulations, which resulted in platinum and palladium futures and options pricing becoming artificial during the Class Period in violation of Sections 13 and 22(a)(1) of the CEA, 7 U.S.C. §§ 13c(a), 25(a)(1).

305. Plaintiffs and each member of the Class each sustained and are entitled to actual damages for the violations of the CEA alleged herein.

CLAIM SEVEN

UNJUST ENRICHMENT
(Against All Defendants in Direct or Quasi-Contractual Relationships with Class Members)

306. Plaintiffs incorporate by reference and reallege the preceding allegations as though fully set forth herein.

307. Because of the acts of Defendants and their co-conspirators as alleged herein, Defendants have been unjustly enriched at the expense of Plaintiffs and the Class.

308. The derivatives markets are effectively a zero-sum game, meaning that when one individual gains money in a particular transaction, another must lose money on that same transaction. As a direct and foreseeable consequence of Defendants' manipulation of the Fixing, Defendants were able reap millions of dollars in profits at the expense of Plaintiffs and members of the Class, who sold Platinum and Palladium Investments, including NYMEX futures.

309. It would violate established principles of equity and good conscience for Defendants to keep their ill-gotten profits from their manipulation of the Fixing and the Platinum and Palladium Investments that were directly tied to them.

310. Accordingly, Plaintiffs and the Class seek restoration of the monies of which they were unfairly and improperly deprived, as described herein, by way of transactions for the sale or purchase of Platinum and Palladium Investments entered into with Defendants or their co-conspirators.

PRAYER FOR RELIEF

Plaintiffs demands relief as follows:

A. That the Court certify this lawsuit as a class action under Rules 23(a), (b)(2), and (b)(3) of the Federal Rules of Civil Procedure, that Plaintiffs be designated as class representatives, and that Plaintiffs' counsel be appointed as Class counsel for the Class;

B. That the unlawful conduct alleged herein be adjudged and decreed to violate Section 1 of the Sherman Act;

C. That Defendants be permanently enjoined and restrained from continuing and maintaining the conspiracy alleged in the Complaint;

D. That the Court award Plaintiffs and the Class damages against Defendants for their violations of federal antitrust laws, in an amount to be trebled in accordance with such laws, plus interest;

E. That the Court find that Defendants violated the CEA and award appropriate damages;

F. That the Court award monetary losses suffered by Class Members that were in contractual or quasi-contractual relationships with a Defendant or an affiliate thereof, due to that Defendants' unjust enrichment at the Class Members' expense;

G. That the Court award Plaintiffs and the Class their costs of suit, including reasonable attorneys' fees and expenses, as provided by law; and

H. That the Court direct such further relief it may deem just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiffs demand a jury trial as to all issues triable by a jury.

DATED: New York, New York
July 27, 2015

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